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USSR Report

ENERGY

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[8 Sep 84 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Oil and Gas Production Plan, January-August 1983 (Percent of Plan)

		August		January-August	
		Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association	(General Director Comrade B. Gadzhiyev)	100,1	105,3	100,2	111,2
Leninneft' NGDU*	(Comrade R. Vezirov, Chief, Comrade M. Mamedov, Party Committee Secretary)	95,4	100,6	97,0	101,4
Imeni 26 Baku Commissars NGDU	(Comrades A. Bagiyev, Ch. Mustafayev)	100,0	102,0	100,8	101,9
Ordzhonikidzeneft' NGDU	(Comrades Z. Tagiyev, R. Ragimov)	103,6	108,7	100,5	109,5
Karadagneft' NGDU	(Comrades K. Kerimov, M. Ragimov)	100,6	115,0	103,0	121,5
Kirovneft' NGDU	(Comrades T. Mamedov, I. Ibragimov)	100,3	102,6	100,3	105,3
Azizbekovneft' NGDU	(Comrades T. Gasanov, M. Alpatov)	102,2	102,1	100,6	108,1
Siazanneft' NGDU	(Comrades M. Musayev, A. Medzhidov)	88,2	100,0	96,4	102,0
Shirvanneft' NGDU	(Comrades V. Mamedov, Z. Geyderov)	100,5	100,3	100,9	110,3
Sal'yanyneft' NGDU	(Comrades F. Guseynov, G. Gasanov)	107,7	105,3	104,1	115,4
Neftechalaneft' NGDU	(Comrades S. Mamedov, I. Dzhafarov)	100,0	133,5	84,6	123,5
Muradkhanlyneft' NGDU	(Comrades S. Muradov, I. Babayev)	118,9	100,0	120,5	100,0
Kaspmorneftegazprom All-Union Prod. Assn.	(Comrade K. A. Abasov, Chief)	100,3	101,7	100,2	103,0
Imeni 22nd CPSU Congress Prod. Assn.	(Comrades S. Ibragimov, N. Zaidov)	104,3	100,0	101,4	100,0
Artemneftegaz NGDU	(Comrades B. Khalilov, T. Azizov)	100,0	114,0	100,0	111,0
Imeni Serebrovskiy NGDU	(Comrades F. Musayev, V. Alekperov)	100,0	100,7	100,6	108,2
Imeni N. Narimanov NGDU	(Comrades G. Gumbatov, Z. Mamedov)	101,0	100,3	101,8	104,1
Imeni 50-Letiye SSSR NGDU	(Comrades B. Mamedov, A. Ponyayev)	81,4	103,9	90,3	95,2
Total for All Associations		100,3	101,0	100,3	103,4

* NGDU [Oil and Gas Production Administration]

--January-August 1983 totals for Azneft' Association show that Leninneft', Neftechalaneft', and Siazanneft' NGDUs did not fulfill oil production plans, falling short of the plan by 33,800 tons. Figures for 8 months of the current year show that NGDU imeni 50-letiye SSSR fell short of the plan by 57,000 tons of oil and 140.3 million cubic meters of gas.

--Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets, being short by 324,100 tons.

[9 Sep 84 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Drilling Plans, January-August 1983 (Percent of Plan)

		August		January-August	
		Total Drilling	Exploratory Drilling	Total Drilling	Exploratory Drilling
Azneft' Association	(Comrade B. Gadzhiyev, General Director)	106,7	89,2	98,1	91,2
Apsheronskoye UBR*	(Comrades G. Gasanov, M. Mamedov)	100,3	88,9	100,2	67,3
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	124,6	100,7	92,2	57,9
Ali-Bayramlinskoye UBR	(Comrades G. Alekperov, N. Ismaylov)	100,2	95,6	94,0	93,1
Neftechalinskoye UBR	(Comrades D. Akhundov, L. Guseynov)	109,3	112,5	101,3	111,4
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	103,3	102,3	93,8	138,5
Gobustanskoye URB**	(Comrades A. Abdullayev, G. Israfilov)	109,4	109,4	104,4	104,4
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	102,1	44,1	96,1	63,9
Kaspmorneftegazprom All-Union Prod. Assn.	(Comrade K. A. Abasov, Chief)	82,3	62,7	89,5	78,1
Neftyanyye Kamni MUBR***	(Comrades O. Abasov, K. Dadashev)	100,1	—	111,3	—
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	100,4	—	105,3	—
Sangachal'skoye MUBR	(Comrades D. Bayramov, S. Aleskerov)	100,2	—	85,4	—
Primorskoye MURB****	(Comrades A. Ismailov, E. Imanov)	51,3	65,9	93,7	102,9
Bulla MURB	(Comrades N. Mamedov, M. Mamedov)	78,0	78,0	90,0	90,0
Bukhta Il'icha MURB	(Comrades A. Gasymov, O. Suleymanov)	105,5	76,4	100,0	72,0
STS [Stationary Equipment] MURB	(Comrades V. Aliyev, A. Muradverdiyev)	50,5	50,5	46,9	46,9
Total for All Associations		96,1	75,7	94,2	84,3

* UBR [Drilling Operations Administration]

** URB [Explanatory Drilling Administration]

*** MUBR [Offshore Drilling Operations Administration]

**** MURB [Offshore Exploratory Drilling Administration]

--January-August 1983 figures show that Azneft' Association was 5,700 meters short of the drilling plan. Siazanskoye, Ali-Bayramlinskoye, Kyursanginskoye, and Dzharlinskoye drilling administrations failed to complete the plan, falling short by 9,100 meters. The association also failed to complete the plan for exploratory drilling (6,800 meters short). The Siazanskoye, Dzharlinskoye, Apsheronskoye, and Ali-Bayramlinskoye drilling administrations fell short by 11,500 meters.

--Kaspmorneftegazprom All-Union Production Association fell short of the drilling plan by 24,300 meters. Sangachal'skoye, Bulla, Primorskoye, and STS drilling administrations failed to complete plans, falling short by 23,600 meters. The association also failed to fulfill the plan for exploratory drilling (18,200 meters short). Bulla, STS, and Bukhta Il'icha MURBs fell short by 17,200 meters.

[6 Oct 83 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Oil and Gas Production Plan, January-September 1983 (Percent of Plan)

		September		January-September	
		Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association		100,3	106,1	100,2	110,6
Leninneft' NGDU	(Comrades R. Vezirov, M. Mamedov)	93,9	100,3	96,7	101,3
Imeni 26 Baku Commissars NGDU	(Comrades A. Bagiyev, Ch. Mustafayev)	101,6	101,9	100,9	101,9
Ordzhonikidzeneft' NGDU	(Comrades Z. Tagiyev, B. Ragimov)	101,9	109,1	100,6	109,5
Karadagneft' NGDU	(Comrades K. Kerimov, M. Ragimov)	101,8	116,7	102,9	120,9
Kirovneft' NGDU	(Comrades T. Mamedov, I. Ibragimov)	101,7	104,6	100,4	105,3
Azizbekovneft' NGDU	(Comrades T. Gasanov, M. Alpatov)	102,3	105,5	100,7	107,8
Siazanneft' NGDU	(Comrades M. Musayev, A. Medzhidov)	78,3	100,3	94,4	101,8
Shirvanneft' NGDU	(Comrades V. Mamedov, Z. Geydarov)	100,1	100,8	100,8	109,3
Sal'yanyneft' NGDU	(Comrades F. Guseynov, G. Gasanov)	106,6	104,9	104,3	114,2
Neftechalaneft' NGDU	(Comrades S. Mamedov, I. Dzhafarov)	100,0	144,0	86,3	125,4
Muradkhanlyneft' NGDU	(Comrades S. Muradov, I. Babayev)	178,4	100,0	125,9	100,0
Kaspmorneftegazprom All-Union Prod. Assn.		100,8	101,3	100,2	102,8
Imeni 22nd CPSU Congress Prod. Assn.	(Comrades S. Ibragimov, N. Zaidov)	105,1	100,0	101,8	100,0
Artemneftegaz NGDU	(Comrades B. Khalilov, T. Azizov)	100,0	114,0	100,0	111,3
Imeni Serebrovskiy NGDU	(Comrades F. Musayev, V. Alekperov)	96,9	100,0	100,2	107,3
Imeni N. Narimanov NGDU	(Comrades G. Gumbatov, Z. Mamedov)	100,0	100,9	101,6	103,8
Bulla-more imeni 50-letiya SSSR NGDU	(Comrades B. Mamedov, A. Ponyayev)	87,1	102,9	89,9	96,0
Total for All Associations		100,5	101,6	100,3	103,3

--January-September 1983 figures show that Leninneft' Siazanneft', and Neftechalaneft' NGDUs did not fulfill all production plans, falling short by 42,300 tons. Totals for 9 months of the current year show that NGDU imeni 50-letiya SSSR fell short of the plan by 67,000 tons of oil and 130.2 million cubic meters of gas.

--Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets, falling short by 359.6 thousand tons.

[7 Oct 83 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Drilling Plan, January-September 1983 (Percent of Plan)

		September		January September	
		Total Drilling	Exploratory Drilling	Total	Exploratory Drilling
Azneft' Association	(Comrade B. Gadzhiyev, General Director)	96,0	74,7	97,8	89,2
Apsheronskoye UBR	(Comrades G. Gasanov, M. Mamedov)	100,2	41,7	100,2	64,0
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	101,2	51,8	93,2	57,1
Ali-Bayramlinskoye	(Comrades G. Alekperov, N. Ismaylov)	69,6	116,8	91,1	96,1
Neftechalinskoye UBR	(Comrades D. Akhundov, L. Guseynov)	118,8	79,6	103,1	108,5
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	103,0	100,2	94,9	134,3
Gobustanskoye URB	(Comrades A. Abdullayev, G. Israfilov)	102,8	102,8	104,2	104,2
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	100,6	21,7	96,7	58,2
Kaspmorneftegazprom All-Union Prod. Assn.	(Comrade K. A. Abasov, Chief)	71,1	49,0	87,3	75,6
Neftyanyye Kamni MUBR	(Comrades O. Abasov, K. Dadashev)	100,2	—	110,1	—
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	71,4	—	101,6	—
Sangachal'skoye MUBR	(Comrades D. Bayramov, S. Aleskerov)	78,4	—	84,5	—
Primorskoye MURB	(Comrades A. Ismailov, E. Imanov)	100,2	90,8	94,4	101,4
Bulla MURB	(Comrades M. Mamedov, M. Mamedov)	32,8	32,8	83,3	83,3
Bukhta Il'icha MURB	(Comrades A. Gasymov, O. Suleymanov)	100,7	65,7	100,1	71,1
STS MURB	(Comrades V. Aliyev, A. Muradverdiyev)	20,0	20,0	43,7	43,7
Total for All Associations		84,9	61,3	93,3	81,6

--January-September 1983 figures show that Azneft' Association fell short of the drilling plan by 7,200 meters. Ali-Bayramlinskoye, Kyursanginskoye, Siazanskoye, and Dzharlinskoye drilling administrations fell short of planned completion by 11,200 meters. The association also failed to fulfill the exploratory drilling plan (by 9,600 meters). The Apsheronskoye, Ali-Bayramlinskoye, Siazanskoye, and Dzharlinskoye drilling administrations were short by 14,200 meters.

--Kaspmorneftegazprom All-Union Production Association fell short of the drilling plan by 33,100 meters. Sangachal'skoye, Bulla, Primorskoye, and STS drilling administrations fell short of plans by 29,500 meters. The association also failed to fulfill the exploratory drilling plan (by 24,200 meters). Bulla, STS, and Bukhta Il'icha MURBs fell 22,000 meters short of plan fulfillment.

[10 Nov 83 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Oil and Gas Production Plan, January-October 1983 (Percent of Plan)

		October		January-October	
		Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association		100,6	107,7	100,2	110,3
Leninneft' NGDU	(Comrades R. Vezirov, M. Mamedov)	100,0	100,3	97,0	101,2
Imeni 26 Baku Commissars NGDU	(Comrades A. Bagiyev, Ch. Mustafayev)	100,0	102,7	100,8	102,0
Ordzhonikidzeneft' NGDU	(Comrades Z. Tagiyev, R. Ragimov)	100,0	108,9	100,6	109,4
Karadagneft' NGDU	(Comrades K. Kerimov, E. Abbasov)	102,2	106,0	102,8	119,3
Kirovneft' NGDU	(Comrades T. Mamedov, I. Ibragimov)	100,0	111,0	100,4	105,8
Azizbekovneft' NGDU	(Comrades T. Gasanov, A. Bakhbanly)	100,0	103,4	100,7	107,4
Siazanneft' NGDU	(Comrades M. Musayev, A. Medzhidov)	100,0	120,0	94,9	103,5
Shirvanneft' NGDU	(Comrades V. Mamedov, Z. Geydarov)	100,4	100,6	100,8	109,4
Sal'yanyneft' NGDU	(Comrades F. Guseynov, G. Gasanov)	102,2	103,3	104,1	113,1
Neftechalaneft' NGDU	(Comrades S. Mamedov, I. Dzhafarov)	100,0	179,4	87,5	129,7
Muradkhanlyneft' NGDU	(Comrades S. Muradov, I. Babayev)	104,0	100,0	122,6	100,0
Kaspmorneftegazprom All-Union Prod. Assn.		100,4	100,1	100,3	102,6
Imeni 22nd CPSU Congress Prod. Assn.	(Comrades S. Ibragimov, N. Zaidov)	100,0	100,0	101,6	100,0
Artemneftegaz NGDU	(Comrades B. Khalilov, T. Azizov)	100,0	123,0	100,0	112,4
Imeni Serebrovskiy NGDU	(Comrades F. Musayev, V. Alekperov)	100,0	108,3	100,2	107,4
Imeni N. Narimanov NGDU	(Comrades G. Gumbatov, Z. Mamedov)	100,0	104,9	101,5	103,9
Bulla-more NGDU imeni 50-letiye SSSR	(Comrades B. Mamedov, B. Mirzabekov)	100,0	87,6	90,8	95,1
Total for All Associations		100,5	100,5	100,2	102,9

--January-October 1983 figures for Azneft' Association show that Leninneft', Siazanneft', and Neftechalaneft' NGDUs failed to fulfill all production plans, falling short by 42,300 tons.

Totals for 10 months of the current year show that Bulla-more NGDU imeni 50-letiye SSSR fell short of the plan by 67,000 tons of oil and 183.9 million cubic meters of gas.

Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets, falling short by 398,600 tons.

[11 Nov 83 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Drilling Plans by Azneft' Association and Kaspmorneftegazprom All-Union Production Association, January-October 1983 (Percent of Plan)

		October		January-October	
		Total Drilling	Exploratory Drilling	Total Drilling	Exploratory Drilling
Azneft' Association		79,7	66,5	96,0	86,8
Apsheronskoye UBR	(Comrades G. Gasanov, M. Mamedov)	46,0	—	94,6	56,6
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	55,3	29,2	89,3	54,2
Ali-Bayramlinskoye UBR	(Comrades G. Alekperov, N. Ismaylov)	79,0	81,3	90,1	94,7
Neftechalinskoye UBR	(Comrades D. Akhundov, L. Guseynov)	106,2	101,0	103,4	107,6
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	93,2	78,2	94,7	127,6
Gobustanskoye URB	(Comrades A. Abdullayev, V. Mamedov)	103,4	103,4	104,1	104,1
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	100,3	32,0	97,0	55,1
Kaspmorneftegazprom All-Union Production Association		72,1	34,2	85,7	49,9
Neftyanyye Kamni MUBR	(Comrades O. Abasov, K. Dadashev)	100,1	2,3 раза	109,0	11,4 раза
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	104,1	—	101,8	—
Sangachal'skoye MUBR	(Comrades D. Bayramov, B. Gadzhiyev)	100,1	—	86,0	—
Primorskoye MURB	(Comrades A. Ismailov, E. Imanov)	52,0	51,5	89,7	95,8
Bulla MURB	(Comrades M. Mamedov, A. Ponyayev)	42,9	42,9	78,6	78,6
Bukhta Il'icha MURB	(Comrades A. Gasymov, I. Guseynov)	32,4	4,0	93,7	63,3
STS MURB	(Comrades V. Aliyev, A. Muradverdiyev)	6,2	6,2	39,4	39,4
Total for All Associations		76,3	49,2	91,4	78,0

--January-October 1983 totals show that Azneft' Association failed to fulfill the drilling plan by 14,600 meters. Apsheronskoye, Ali-Bayramlinskoye, Kyursanginskoye, Siazanskoye, and Dzharlinskoye drilling administrations fell short of the plan by 18,600 meters. The association also failed to fulfill the exploratory drilling plan (by 13,200 meters). Apsheronskoye, Ali-Bayramlinskoye, Siazanskoye, and Dzharlinskoye drilling administrations fell short by 18,600 meters.

Kaspmorneftegazprom All-Union Production Association fell short of the drilling plan by 41,500 meters. Sangachal'skoye, Bulla, Primorskoye, Bukhta Il'ich, and STS drilling administrations fell short of plans by 37,100 meters. The association failed to fulfill the exploratory drilling plan (by 32,300 meters), and Bulla, Primorskoye, STS, and Bukhta-Ilicha MURBs fell short of drilling plans by 29,700 meters.

[9 Dec 83 p 3]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Drilling Plans by Azneft' Association and Kaspmorneftegazprom All-Union Production Association, January-November 1983 (Percent of Plan)

		November		January-November	
		Total Drilling	Exploratory Drilling	Total Drilling	Exploratory Drilling
Azneft' Association		79,8	75,7	94,5	85,7
Apsheronskoye UBR	(Comrades G. Gasanov, M. Mamedov)	58,4	28,4	90,7	53,8
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	69,9	27,8	87,5	51,6
Ali-Bayramlinskoye UBR	(Comrades G. Alekperov, N. Ismaylov)	46,3	21,6	86,6	87,2
Neftechalinskoye UBR	(Comrades D. Akhundov, I. Guseynov)	94,8	41,9	102,5	102,1
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	100,0	112,1	95,2	125,8
Gobustanskoye URB	(Comrades A. Abdullayev, V. Mamedov)	104,0	104,0	104,1	104,1
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	136,4	118,4	100,0	60,3
Kaspmorneftegazprom All-Union Production Association		63,7	40,3	83,7	66,9
Neftyanyye Kamni MUBR	(Comrades O. Abasov, K. Dadashev)	47,3	12,4	102,5	в 3,9 р.
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	100,3	—	101,7	—
Sangachal'skoye MUBR	(Comrades D. Bayramov, B. Gadzhiyev)	61,7	—	83,8	—
Primorskoye MURB	(Comrades A. Ismailov, E. Imanov)	24,8	27,1	83,2	88,8
Bulla MURB	(Comrades M. Mamedov, A. Ponyayev)	79,5	79,5	78,7	78,7
Bukhta Il'icha MURB	(Comrades A. Gasymov, I. Guseynov)	101,5	28,7	94,3	60,2
STS MURB	(Comrades V. Aliyev, A. Muradverdiyev)	—	—	35,3	35,3
Total for All Associations		72,6	54,6	89,7	73,9

--January-November 1983 totals show that Azneft' Association fell short of drilling plans by 22,100 meters. Apsheronskoye, Ali-Bayramlinskoye, Kyursanginskoye, and Siazanskoye drilling administrations fell behind plans by 25,200 meters. The association also failed to fulfill the exploratory drilling plan by 15,700 meters. Apsheronskoye, Ali-Bayramlinskoye, Siazanskoye, and Dzharlinskoye drilling administrations were 19,800 meters short of the plan.

Kaspmorneftegazprom All-Union Production Association fell short of the drilling plan by 52,400 meters. Sangachal'skoye, Bulla, Primorskoye, Bukhta Il'icha, and STS drilling associations failed to fulfill drilling plans by 44,400 meters. The association also failed to fulfill the exploratory drilling plan by 39,500 meters. Bulla, Primorskoye, STS, and Bukhta Il'icha MURBs fell 36,400 meters short of drilling plans.

[7 Jan 84 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Oil and Gas Production Plan, 1983 (Percent of Plan)

		December		January-December	
		Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association		100.0	104.4	100.2	109.6
Leninneft' NGDU	(Comrades R. Vezirov, E. Makhmudov)	92.7	100.6	96.9	101.1
Imeni 26 Baku Commissars NGDU	(Comrades A. Bagiyev, Ch. Mustafayev)	100.0	103.9	100.6	102.3
Ordzhonikidzeneft' NGDU	(Comrades Z. Tagiyev, R. Ragimov)	100.0	108.8	100.5	109.4
Karadagneft' NGDU	(Comrades K. Kerimov, E. Abbasov)	102.0	101.5	102.6	116.6
Kirovneft' NGDU	(Comrades T. Mamedov, I. Ibragimov)	100.8	104.3	100.3	106.1
Azizbekovneft' NGDU	(Comrades T. Gasanov, A. Bashbanly)	100.0	112.6	100.6	109.0
Siazanneft' NGDU	(Comrades M. Musayev, A. Medzhikov)	100.0	101.3	95.7	104.1
Shirvanneft' NGDU	(Comrades V. Mamedov, Z. Geydarov)	103.0	102.1	100.9	107.1
Sal'yanyneft' NGDU	(Comrades F. Guseynov, G. Gasanov)	110.9	105.9	104.4	113.0
Neftechalaneft' NGDU	(Comrades S. Mamedov, I. Dzhafarov)	84.6	123.5	88.4	132.7
Muradkhanlyneft' NGDU	(Comrades S. Muradov, I. Babayev)	100.0	100.0	118.7	100.0
Kaspmorneftegazprom All-Union Production Associations		100.3	100.1	100.3	102.1
Imeni 22nd CPSU Congress Prod. Assn.	(Comrades S. Ibragimov, N. Zaidov)	101.4	100.0	101.4	100.0
Artemneftegaz NGDU	(Comrades B. Khalilov, T. Azizov)	100.0	109.3	100.0	112.1
Imeni Serebrovskiy NGDU	(Comrades F. Musayev, V. Alekperov)	97.9	110.9	100.0	107.7
Imeni N. Narimanov NGDU	(Comrades G. Gumbatov, Z. Mamedov)	100.0	103.5	101.2	103.8
Bulla-more NGDU imeni 50-letiye SSSR	(Comrades B. Mamedov, B. Mirzabekov)	100.0	85.2	92.3	93.6
Total for All Associations		100.5	100.3	100.3	102.5

--Totals for 1983 show that Azneft' Association's Leninneft', Siazanneft', and Neftechalaneft' NGDUs failed to fulfill oil production plans by 48,700 tons.

Totals for 1983 show that NGDU imeni 50-letiye SSSR failed to fulfill oil production plans by 67,000 tons and gas production plans by 294.2 million cubic meters.

Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets in 1983.

[8 Jan 84 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of 1983 Drilling Plans (Percent of Plan)

		December		January-December	
		Total Drilling	Exploratory Drilling	Total Drilling	Exploratory Drilling
Azneft' Association		61.1	50.5	91.6	14.7
Apsheronskoye UBR	(Comrades A. Khasmamedov, M. Mamedov)	98.8	6.8	83.9	47.3
Stazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	44.8	6.4	84.1	47.6
Ali-Bayramlinskoye UBR	(Comrades G. Alekperov, N. Ismayilov)	51.3	12.2	83.7	81.5
Neftechalinskoye UBR	(Comrades D. Aleksandov, I. Guseynov)	100.3	85.5	102.2	101.1
Kyursanginskoye URB	(Comrades A. Rakishiyev, Sh. Abilov)	44.6	22.1	92.5	121.8
Sobustanskoye URB	(Comrades A. Abdullayev, V. Mamedov)	81.2	81.2	102.2	102.2
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	65.2	52.6	94.6	59.8
Kaspmorneftegazprom All-Union Production Association					
Neftyanyye Kamni MURB	(Comrades O. Abasov, K. Dadashev)	101.0	118.1	102.4	в 2,8 р.
Pilyuginskoye MURB	(Comrades Sh. Mekhtiyev, B. Mamedov)	82.2	—	100.2	—
Sangachal'skoye MURB	(Comrades O. Bayramov, B. Gadzhiyev)	50.7	—	81.0	—
Primorskoye MURB	(Comrades A. Ismailov, E. Imanov)	39.3	23.1	79.1	82.5
Bulla MURB	(Comrades M. Mamedov, A. Ponyayev)	37.5	37.5	74.8	74.8
Bukhta Il'icha MURB	(Comrades A. Gasymov, I. Guseynov)	70.8	5.5	92.1	55.0
STS MURB	(Comrades V. Aliyev, A. Muradverdiyev)	5.0	5.0	32.4	32.4
Total for All Associations		59.2	38.6	87.0	73.6

--Totals for 1983 show that Azneft' Association fell 37,700 meters short of the drilling plan. Apsheronskoye, Ali-Bayramlinskoye, Kyursanginskoy, Stazanskoye, and Dzharlinskoye drilling administrations failed to complete the plan, falling 40,500 meters short. The association also failed to fulfill the exploratory drilling plan (by 20,700 meters). Apsheronskoye, Ali-Bayramlinskoye, Stazanskoye, and Dzharlinskoye drilling administrations fell 23,900 meters short.

Kaspmorneftegazprom All-Union Production Association fell 65,800 meters short of the drilling plan in 1983. Sangachal'skoye, Bulla, Primorskoye, Bukhta Il'icha and STS drilling administrations fell 52,600 meters short of plans. The association also failed to fulfill the exploratory drilling plan (by 48,500 meters). Bulla, Primorskoye, STS, and Bukhta Il'icha MURBs fell 45,200 meters short of drilling plan fulfillment.

January-November Figures

Baku BAKINSKIY RABOCHIY in Russian 8 Dec 83 p 1

[Chart of oil and gas production figures: "On the Oil Front"]

[Text] Azerbaijan SSR Central Statistical Administration on Fulfillment of Oil and Gas Production Plan, January-November 1983
(Percent of Plan)

	November		January-November	
	Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association	100,6	107,6	100,3	110,1
Leninneft' NGDU (Comrades R. Vezirov, M. Mamedov)	100,0	100,5	97,3	101,6
Imeni 26 Baku Commissars NGDU (Comrades A. Bagiyev, Ch. Mustafayev)	100,0	104,2	100,7	102,2
Ordzhonikidzeneft' NGDU (Comrades Z. Tagiyev, R. Ragimov)	100,0	109,2	100,5	109,4
Karadagneft' NGDU (Comrades K. Kerimov, E. Abbasov)	100,9	104,8	102,6	118,0
Kirovneft' NGDU (Comrades T. Mamedov, I. Ibragimov)	100,0	108,6	100,3	106,1
Azizbekovneft' NGDU (Comrades T. Gasanov, A. Bakhbanly)	100,0	110,0	100,6	107,6
Siazanneft' NGDU (Comrades M. Musayev, A. Medzhidov)	100,0	112,8	95,3	104,3
Shirvanneft' NGDU (Comrades V. Mamedov, Z. Geydarov)	100,1	100,2	100,7	107,6
Sal'yanyneft' NGDU (Comrades F. Guseynov, G. Gasanov)	100,8	106,6	103,8	112,5
Neftechalaneft' NGDU (Comrades S. Mamedov, I. Dzhafarov)	100,0	187,1	88,5	133,8
Muradkhanlyneft' NGDU (Comrades S. Muradov, I. Babayev)	112,5	100,0	121,2	100,0
Kaspmorneftegazprom All-Union Production Association	100,4	100,1	100,3	102,3
Imeni 22nd CPSU Congress Prod. Assn. (S. Ibragimov, N. Zaidov)	100,0	100,0	101,4	100,0
Artemneftegaz NGDU (Comrades B. Khalilov, T. Azizov)	100,0	111,7	100,0	112,3
Imeni Serebrovskiy NGDU (Comrades F. Musayev, V. Alekperov)	100,0	107,8	100,2	107,4
Imeni N. Narimanov NGDU (Comrades G. Gumbatov, Z. Mamedov)	100,0	103,1	101,3	103,8
Bulla-more NGDU imeni 50-letiye SSSR (Comrades B. Mamedov, B. Mirzabekov)	100,0	88,9	91,6	94,4
Total for All Associations	100.5	100.5	100.2	102.9

January-November 1983 totals for Azneft' Association show that Leninneft', Siazanneft', and Neftechalaneft' NGDUs failed to fulfill oil production plans by 42,300 tons.

Figures for the first 11 months of the current year show that Bulla-more NGDU imeni 50-letiye SSSR fell short of the plan by 67,000 tons of oil and 230.2 million cubic meters of gas. Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets by 436,900 tons.

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CSO: 1822/205

DEVELOPMENT PROBLEMS AT EKIBASTUZ DESCRIBED

Moscow UGOL' in Russian No 12, Dec 83 pp 3-11

[Article by M. I. Shchadov, first deputy minister, USSR Coal Industry: "Urgent Problems in the Development of ETEK"]

[Text] ETEK [The Ekibastuz Fuel and Energy Complex] has, with regard to the scale of its development and the uniqueness of its natural conditions, a special place among the most important elements of the country's fuel and energy base. In addition to the Bogatyr', Severnyy, Vostochnyy and Maykyubenskiy pits, the complex based on the Ekibastuz and Maykyubenskiy coal basins will include large thermal electric power stations with a total capacity of 20 million kW, both AC and DC transmission lines totaling more than 7,700 km, new railroad lines stretching 1,090 km, construction industry enterprises, housing, municipal, cultural and service facilities.

The entire country is building the fuel and power giant in northern Kazakhstan, as a whole series of ministries and departments are participating in the creation of ETEK. The Central Committee of the VLKSM [All Union Lenin Young Communist League] has made ETEK's construction an All Union Komsomol shock project. Republic and local party, soviet and economic organs are giving thorough assistance to all enterprises and organizations in completing the tasks entrusted to them.

The pits of the Ekibastuzugol' [Ekibastuz Coal] Association, the largest in the sector, are the basis for the complex. The Ekibastuz coal basin, occupying a comparatively small area, gives the country one out of every four tons of coal extracted by surface methods. However, in spite of the rather favorable geometric parameters of bedding, the complex geological structure and the physical-mechanical properties of the three main contiguous seams create great difficulties for their mining by powerful bucket wheel excavators.

Mining Geological Conditions and Quality of Coal in the Ekibastuz Basin.

The basin's coal seams and enclosing rock are in the form of a trough shaped asymmetric plunging fold with maximum axial dimensions of 24 and 8.5 km. Commercial reserves are at depths of up to 760 m. The horizontal width of some sections close to the surface reaches 600 m, while the bedding angle ranges from 0° to 90° (Table 1.).

Table 1., Distribution of Reserves (in percent) by Bedding Angle (°)

Seam	Bedding Depth (m)	0 - 25°	25 - 45°	45 - 90°
I	To 200	62	11	27
II	200 - 400	86	9	5
III	400 - 690	100	--	--

The coal seams (especially Seam III) consist of frequently interbedded bands of coal and rock (mainly weakly carbonaceous and carbonaceous argillite) of differing thickness and hardness. The coefficient of coal and carbonaceous rock hardness is f = 1.5/3.3 (on Prof. M. M. Protod'yakonov's scale), of rock interbeds -- f = 2/11 while for overburden rock -- f = 4.1/5.6. The thickness distribution of rock interbeds is given in Table 2.

Table 2. Rock Interbeds as a Percentage of Thickness (m)

Seam	≤0.5	0.5 - 1	1 - 1.5	1.5 - 3	3 - 6	>6
I	8	2.4	0.6	1	1.3	0.5
II	4.8	1.8	1.2	1.9	0.8	0.1
III	6.1	2.3	2.2	5.4	8.3	20.1

Also, in the coal series there are frequently geological dislocations with a finely jointed structure, hard (f = 5) interbeds, jointed low ash strata with rock interbeds, very hard lenticular inclusions, etc.

The basin's coal has high ash content, characterized by wide ranging variation. (See Table 3.).

Table 3. Percentage Distribution of Coal Ash Content

Seam	<15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
I	1	6	12	26	32	11	8	4
II	2	11	23	30	17	9	7	1
III	3	3	12	18	15	22	14	13

The use of Ekibastuz coal for power generation purposes predetermines the commercial characteristics of its quality, the level of which depends upon the relationship of outlays for its extraction and the production of electrical energy. The lower the prime cost of coal extraction, including transportation to electric power stations, then the lower will be the demands which can be made upon its combustion qualities.

However, the technical potentials of boiler units are restricted. There is a limit beyond which even short term deterioration in coal quality leads either to a sharp increase in mazut consumption or to a complete halt in burning. Not only average ash content, but also its allowable range are important here. Studies show that if this range contracts by 2 fold, then fuel consumption for the generation of electrical energy declines by 10 percent.

In addition to meeting requirements for coal quality the pits at ETEK also face a steady increase in extraction volumes, up to 105 - 115 million tons in 1990. Thus, there is a multifactor interaction, not subject to a single valued statistical solution, between the amount of coal extracted, its qualities and mining operation parameters.

The wide range of coal quality changes within excavator passes along and across the seams inevitably leads to the necessity of its blending. This is possible at all stages, beginning with extraction and ending with the delivery of pulverized coal to station furnaces. This problem should be first of all solved at the pit. Parameters for mining operations and the mechanization structure influence the indicator of coal ash content blending. Fluctuations in the "route" ["marshrutnoy"] ash content (i.e. the volume of units delivered to the route) are substantially lowered when there is an increase in the number of working excavators. For example, when there was an increase, from 1 to 4, in the number of excavators working seam III at the Bogatyr' pit, relative ash content declines by 25 percent. However, this makes it necessary to reduce unit capacity, and consequently the linear parameters of excavators, leading to deterioration in mining operation conditions, to complications in transportation layouts and the coal quality control process. The coefficient of blending in the route, calculated as the ratio of standard deviations of quality before and after blending can, according to forecast data, reach the value 2. According to data from UkrNIIproyekt [Possibly: Ukrainian Scientific Research and Design Institute], the use of blender loading complexes (BLC) can increase this indicator to 10. Such complexes can perform a number of other functions: buffer storage when there are irregularities in the delivery of freight cars by the MPS [Ministry of Railways], and as points for the mechanized and automated commercial testing and batch loading of coal in freight cars. A BLC makes possible considerable increases in coal extraction volume by raising excavator productivity through reductions in idle time waiting for empty freight cars, improvements in the use of mine rolling stock, reductions in customers' unit fuel consumption and the elimination of freight car reloading.

The creation and use of special boiler units for high ash coals is a prerequisite for the transition to the bulk extraction of coal. This will increase pit capacity through the mining of coal with ash content up to 60 percent. It will also make it possible to give preference to mining engineering factors in the selection of excavator and transportation equipment.

Extraction Operations

Given the existing technology, the domestic and foreign bucket wheel excavators which had been in Ekibastuz pits up until 1965 could not effectively work the hard rock interbeds. Therefore during 1955-1965 coal was extracted only by single bucket excavators. Their operation revealed the imperfections in the coal extraction process using mechanical shovels: their small parameters and technical productivity hindered further increases in coal extraction; the large numbers in operation (up to 45) led to complicated production organization and deteriorated techno-economic indicators primarily because of the elaborate transportation layout and low labor productivity; it did not provide for the selective working of seams, leading to large losses and deliveries of coal in unstandard sizes.

All this made it necessary to replace excavator equipment and improve the coal extraction process. New technology for the effective extraction of hard coal from seams with complex structures was developed and introduced, the design of existing bucket wheel excavators improved and new types created. A feature of the new process is the preliminary fragmentation of the coal by blasting "to shake it up" (retaining its structure), ensuring the effective and stable operation of powerful bucket wheel excavators during the selective extraction of hard coal bands and rock interbeds with coal of the required ash content. The coal is fragmented by drilled charges (hole diameters: 160 and 214 mm). The relative resistance of the coal to bucket excavation is reduced to a level making possible the normal operation of bucket wheel excavators with increased unit digging force while the retention of the seams' structural characteristics permits the effective use of the excavators.

Rational parameters for blasting preparations have been developed by the joint efforts of associates at sector institutes and workers at the Ekibastuzugol' Association and pits. Taking into consideration all the diverse conditions of seam bedding, four types of coal massifs have been distinguished. These differ in hardness, jointing, the cohesion of rock in the massif and the resistance of coal to cutting. The rational unit consumption of explosives has been determined for each type. Differential fragmentation is used for benches of differing height. The charges are concentrated near the stronger interbeds. Descriptions have been developed for blasting preparation, depending upon the type of excavator and face parameters and structure.

However, there is still much remaining to be done to improve drilling and blasting operations, both with regard to equipment and techniques and its organization and coordination with other elements. It is essential to modernize the drill unit fleet through the introduction of SBR-160A and 2SBSh-200MN type machines; the BTS-150 unit with diesel drive should be used for drilling to eliminate hanging sections of banks and ledges. There should also be improvements in the utilization factor and patterns of unit loading, as well as in the drilling equipment service and repair system.

Blasting with small charges increases the number of shots, complicating the process and preventing the effective use of charge loading machines. Coal massif blasting preparation improvements should be directed towards the mechanization of charge loading and drilling bottom holes, increasing the use of massive charges, and the coordination of drilling and blasting work parameters with rational conditions for excavation and with the presence of hard inclusions in the coal massif.

Blast preparation is also made difficult by the intended use of conveyors on the Vostochnyy Pit. This includes a number of face and combined conveyors, located in direct proximity to the blocks being blasted. It is essential to minimize the scattering of rock and to protect conveyors from falling rock and seismic effects during blasting, while still sufficiently fragmenting the blocks.

The following rational flowsheets for working the faces have been developed in order to effectively utilize bucket wheel excavators under different structural-strength indicators and geological parameters: at bedding angles of 0°-40° -- working at the normal width with one pass of the excavator; at bedding angles of 40°-80° -- working in one pass using controlled caving and working with two passes of the excavator.

A flowsheet for working the faces at normal width with one pass of the excavator and with the separate excavation of coal bands and rock interbeds is used at the Bogatyr' and Severnyy pits when there are bedding angles of 8°-20° and 12°-40° respectively.

The flowsheet with controlled caving was introduced for the working of steeply dipping seams, where the coal and rock is not moved great distances and where there is separate excavation. Faces are worked in two passes under other conditions and in sections with low resistance to digging.

The most rational directions in coal extraction operations have been selected in order to ensure the effective working of faces and the intramine blending of commercial coal quality. In the northeast part of the basin the coal seams are worked on the hanging wall side to a depth of 200 m, and in the south part on the footwall side. This is the first time this has been done in the selective development of a deposit with a complex structure. At the Bogatyr' pit alone, this way of working the field has reduced the annual volume of stripping work by 25 percent, the total distance of the work front by 1.2 fold and has made it unnecessary to move railroad tracks. This has been beneficial to track condition and had made it possible to increase train speed by 15 percent.

In order to work hard coals and rock interbeds, bucket wheel excavators have been redesigned and new types created, the designs of which include a number of new basic features. In designing these machines it was necessary to develop gravity operated working tools for extracting hard coals; provide for increased rigidity, high reliability and longevity of basic components under severe climatic conditions and create high speed working tools with direct centrifugal unloading. The new bucket wheel excavators should have reduced linear parameters, high productivity and increased digging force.

Experimental research has shown that coal can be extracted in the Ekibastuz basin by a bucket wheel excavator with a unit force of digging in the 100-180 N/cm^2 range. Domestic bucket wheel excavators capable of these and greater digging forces are being produced in accordance with the specifications for types and sizes of continuous mining equipment developed by UkrNIIproyekt. The following are now being series produced: ER-1250-16/1.5D (ERG-400D) standardized excavators, which are now the basic extraction machines at USSR Minugleprom surface mines, the ERP-1250-16/1, intended for work in difficult conditions in the basin, and ERShRD-5000 bucket wheel complexes. A new type of working tool has been created -- a wheel with centrifugal unloading. It makes it possible to sharply reduce the metal intensiveness of bucket wheel excavators with increased unit digging force and improved dynamic parameters for digging. The production of future excavators using this type of working tool is being mastered.

The creation of hydraulic drives for excavators' basic working mechanisms is a very important direction in the further improvement of bucket wheel excavator dynamic characteristics when working hard rock, improving their productivity and reliability, reducing excavation energy intensiveness and considerably reducing the amount of drilling and blasting work. The activization of research and development work in this area is a very urgent task.

Bucket wheel excavators now account for about 86 percent of all coal extracted from the association's pits. The extensive use of powerful, highly productive machines has made the problem of the batch loading of MPS gondolas especially acute. Unfortunately, a technically and commercially feasible way of weighing rock mass in the working face has not yet been found. The present conveyor scales do meet the requirements for commercial accuracy and are insufficiently reliable.

The development of instruments for measuring the ash content of coal as it flows through the line is very important for effective quality control over extracted coal. This becomes especially important with the introduction of conveyors and BLCs [blender loader complexes]. Although prototypes of such an instrument have already been created (the "Straume" type ash meter), they cannot be considered as perfected, as they are insufficiently reliable under the real operating conditions of a bucket wheel excavator.

Although the technical problems of excavating Ekibastuz coal with bucket wheel excavators have been for the most part solved, there are still definite difficulties in the introduction of such equipment. For example, the plans provide for the use of ERP-1250 excavators at the Severnyy pit and SRs(k)-2000 excavators at the Bogatyr' pit. This decision has not yet been completely implemented, primarily due to difficulties in the manufacture and delivery of machines. The effect of this is especially felt at the Bogatyr' pit, where the joint operation of various types of equipment, the linear parameters of which have different constraints (for example, bench height from 16 to 30 m) and difficulties in the preparation of new extraction horizons have had a considerable influence in causing the pit's mining engineering parameters to deviate from the planned ones.

There are substantial reserves for improving excavator productivity through reductions in planned idle time (mainly planned repairs) and unplanned (primarily waiting for freight cars and breakdowns in main equipment). It is sufficient to note that the actual shift time use factor is 0.25-0.4, while time spent waiting for and moving freight cars reaches 50 percent of shift time. The time spent in the technical servicing and repair of bucket wheel excavators amounts to 20-55 percent of calendar time and substantially exceeds norms. This is due to shortcomings in repair work organization and the small capacity and shortage of equipment at the enterprise's repair base.

The time spent repairing excavator breakdowns amounts to 1-10 percent of calendar time. Idle time due to emergencies is mainly caused by breakdowns in digging and conveyor equipment. A sizable number of digging equipment breakdowns take place during the excavation of hard rock interbeds. This, in its turn, is due to the improper preparation of faces during fragmentation blasting. In addition,

the maximum technical productivity of bucket wheel excavators frequently exceeds (by 1.3-2 fold) the norms, leading to the overloading of main drives and the breakdown of conveyor equipment. This requires additional repair time. It is essential that the length of repair time be brought into accordance with existing norms, which, in their turn, should be reduced through improvements in the organization of technical servicing and repairs and through increases in repair base capacity and improvements in equipment availability. The implementation off these measures will minimize bucket wheel excavator repair time. There are still also very great losses in productivity due to railroad switching operations. This problem should be solved by the sector's production workers and specialists.

Bucket wheel excavators can also be used to cut extraction horizons, especially at the Bogatyr' pit, something which has already become necessary. The time spent in the preparation of new horizons, including the cutting of horizons and the laying of railroad tracks should not exceed two years. This includes one year for mining operations. The layout used for EKG-4u excavators is complicated, involving the relaying of up to 25 km of railroad track and requires three years to prepare extraction horizons. The inevitable production of nonstandard sizes of coal extracted by single bucket excavators, considerable (1.5-2 hours) idle time for locomotives and cars being loaded, and the increased unit consumption of explosives are shortcomings in the present flowsheet. Work is now under way on the development of special equipment (interbench reloaders and loading devices) which will make it possible to use ERP-1250, ERShRD-5000 and SRs(k)-2000 bucket wheel excavators to cut 10-28 m deep trenches.

The struggle against dust created during the extraction and subsequent movement of coal is quite serious. It solution is especially important due to the planned introduction of conveyors for flow layouts (Vostochnyy pit) and cyclic-flow layouts (Severnyy and Bogatyr' pits). The existing equipment for dust supression is restricted with regard to assortment and range of use. As a rule, these are mainly sprinkler systems (the high pressure units especially are quite effective during warm weather) and suction-filter units. The main sources of dust will be units for transfer from reloaders to conveyors, between conveyors, storage areas, loading points and installations for reloading from railroad to conveyor. This problem must be solved by sector scientific research organizations with the help of other institutes, including academic ones.

Stripping Operations

The steady increase in the working depth (this also means increases in working zone heights) at Ekibastuz pits is leading to increases in the total distance of the stripping work front (more than 100 km). There is corresponding growth in the volume of overburden rock movement. Between 1960 and 1980 it increased by 43 million m^3 and by 1985 will grow another 18 million m^3. Cuts are opened by flank trenches with external spoil banks. However, because of the cosiderable depth (around 100 and 70 meters respectively for the Severnyy and Botagyr' pits) a direct approach to the lower horizons is impossible. Transportation (See Fig. 1.) includes dead end approaches to stations. This results in crossings of stripping and extraction freight movements and in sliding cross-overs. Their use means

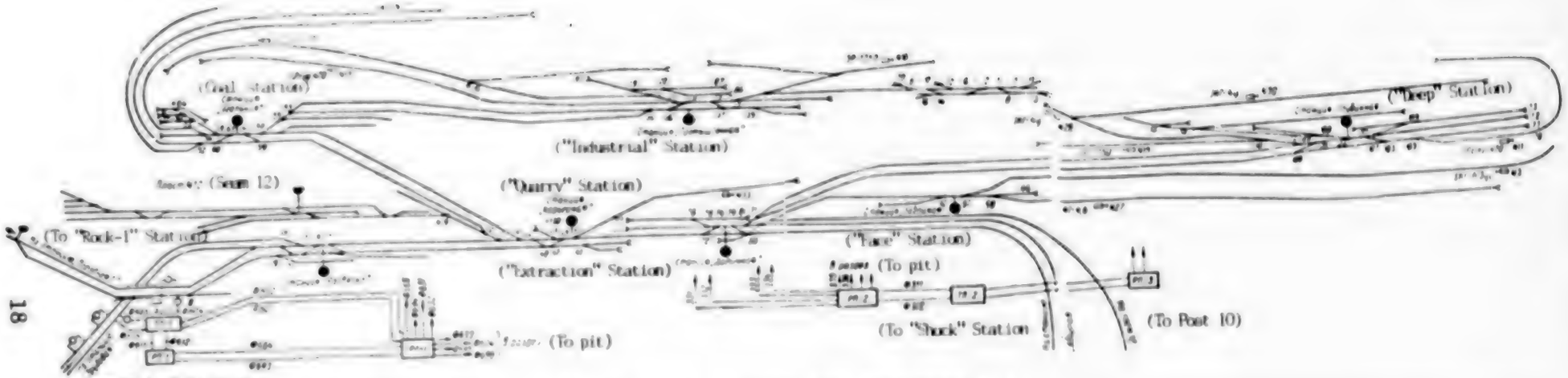

Figure 1. Track Development Layout for Severnyy Pit.

shorter transportation links between working horizons and exit trenches, but their traffic carrying capacity is limited. When there are saturated freight flows this reduces the effectiveness of mine transportation equipment.

At present the Severnyy combined cut is working 8 stripping banks, while the Bogatyr' (Stepnoy stripping pit) is working 5. The flowsheet for their stripping and working is already quite complex and will become even more so as mining operations get deeper. As a result of this and the influence of other factors, the calendar time use coefficient of excavators at stripping operations is 20-25 percent below planned levels and at spoil bank operations 20-33 percent below. The biggest explanation of this is the shortage of transportation, only 65-70 percent of the stripping excavators' transportation needs are met. There are thus obvious and substantial losses in excavator productivity. In 1982 it only reached 47 percent of planned levels at the Stepnoy stripping pit. All this caused considerable lagging of stripping operations, especially at the lower horizons of the eastern side of the Severnyy pit and the anticlinal and facial regions of the Bogatyr' pit.

Improvements in the technology of stripping operations in general and individual processes are a reserve for raising production efficiency and ensuring the required volumes of overburden rock removal. The single bucket excavator remains the basic extraction machine at these operations. It is technically upgraded through improvements in components and parts, increases in linear parameters and bucket capacity. The SE-3 and EKG-4 excavators have gradually been replaced by EKG-8i, EKG-12.5 and EKG-6.3u excavators. EKG-12.5s with 16 m^3 buckets are already being used at spoil banks. The next to be introduced will be the promising EKG-20 model. At the same time, Ekibastuzugol' is experiencing shortages of the EKG-12.5, the basic stripping machine. This applies especially to work at the Severnyy pit, where there are no such machines. The EKG-8i excavators are the ones primarily used (22 out of 28). The approved technical plan provides for the complete modernization of the stripping excavator fleet to EKG-12.5 machines. It is essential to look for possibilities of increasing bank height, as this would permit reductions in the current stripping volume and the number of transport horizons. Stripping bank height now averages 10-12 m. Attempts to use a layout with combined banks of up to 35 m have still not produced the results which would permit the widespread use of this method.

Blast holes are drilled by 2SBSh-200 and 2SBSh-200N units. Drilling volume is systematically increasing. NIIORG [Possibly: Scientific Research Institute for the Organization of Mining Operations] associates, jointly with association and pit workers have established that 18 m is the maximum height for a bank to be blasted. Banks are blasted in a set which is up to 26 m wide, a 1.5-2 m high protective berm is built along the railroad tracks and additional holes up to 8 m deep are drilled between holes in the last series. Charges in holes drilled at angles of 75° are detonated with 35-70 millisecond delays. If banks more than 18 meters high are blasted there are, as a rule, slides which obstruct railroad tracks.

The association should work to increase the reserve of fragmented rock mass. At present, the systematic delays in drilling operations make it necessary to shoot a large number of small shots, reducing the quality of fragmented rock and

increasing unproductive idle time of mining and transportation equipment. The levels of drilling operation mechanization are low because of the poor quality of the equipment produced. The insufficiently strict observation of technological discipline also has an effect upon the quality of the prepared rock mass.

Just as is the case with coal extraction, the main ways to improve drilling and blasting work involve its overall organization and linkages with other processes and improvements in the structure and upkeep of drilling equipment and blasting operation techniques.

Reliable results have not yet been obtained from research on the possibility of extensively using bucket wheel excavators for stripping operations. The high values of digging resistance, stripping volume and working zone height all make mutually exclusive demands upon the durability, reliability and linear parameters of such excavators. In designing excavators with high digging force it is attempted to make them as compact as possible, i.e. small linear parameters, while from a technological point of view it is essential to have machines with large linear parameters. Nevertheless, there should be a focused and systematic search for a solution to problems in the rational use of continuous excavators for stripping operations. This would create the prerequisites for sizable increases in labor productivity.

At the Severnyy, Yuzhnyy and Zapadnyy spoil banks use is made of excavator stacking in a single stack with the two sided development of a curvilinear front. The following excavators are used here: EKG-8i with 8 and 10 m^3 buckets, EKG-12.5 with 12.5 and 16 m^3 buckets and ESh-10/70A in a layout with stacking in two sub-banks and the transfer of rock to a second stack on a single dead end track. The use of draglines reduces haulage distance, increases spoil bank capacity, reduces track relocation work and increases total bank height to 90 m. Work experience has shown that bank slopes of up to 35 m are stable. In the future the use of conveyors will make it possible to stack banks of greater height, making it possible to substantially reduce the average distance between stripping operations and spoil banks.

Thus, practically all elements of stripping work can and should be substantially improved. This will be assisted by the precise organization of their interaction, the strict observation of technological discipline and constant improvements in the professional standards of workers and engineering-technical personnel. Stripping operation intensiveness can be improved mainly through the conversion to combined railroad-conveyor haulage, the improvement of methods and equipment of railroads, blasting and excavators.

Pit Drainage

The advanced drainage of coal deposits being prepared for development by surface methods is essential for the normal functioning of each pit. Work safety and the effective use of unique mine haulage equipment at pits is possible only with a system of measures to drain groundwaters.

The Ekibastuzugol' Association widely applies drainage methods which use underground drains and raise drilled wells. At the Severnyy pit the drainage tunnel system includes three inclined shafts located in the western non-working side,

and drainage drifts and cross drifts totaling 14 km driven through coal seams at a depth of 200 m. These tunnels have special rooms, in each of which 6-9 raise wells have been drilled. The wells are arranged in a fan shape at angles of 30°-70° from the horizon.

At the Bogatyr' pit the mining field is drained through a two layer system of 16 km of drainage tunnels (drifts, cross drifts, and crosscuts) 80 and 180 m below the surface. The drainage horizons are penetrated by two inclined shafts located in the southeast non-working side of the pit.

Over a 5-6 year period the drainage tunnels are dug out by coal banks and should be replaced. According to the reconstruction plan for the Severnyy pit, where there is already considerable lagging in drainage work and their is no effective drainage of overburden rock, it is necessary that three vertical shafts, 377, 403 and 415 m deep, be sunk in the non-working side and the first section of 11,250 m of horizontal drainage workings be driven at a depth of 400 m. The expanded work front at the Bogatyr' pit resulting from the opening of reserves in Section No. 9 makes it necessary to drive 8,100 m of drainage tunnels at a depth of 180 m. In order to drain rock and coal at the Vostochnyy pit now under construction, a 440 m inclined shaft and drainage horizons at 80 and 180 m below the surface with drainage tunnels totaling 9,365 m are being driven. Thus, over the next 4-5 years just at the operating Severnyy and Bogatyr' pits and the Vostochnyy pit now being built it will be necessary to sink 4 shafts totaling 1,635 m and drive about 30 km of drainage tunnels. In addition, it is also essential to very rapidly work out a plan for draining the deep horizons of the Bogatyr' main field (Sections No. 5 and 6). Special attention here should be given to measures for draining overburden rock because of the forthcoming conversion of stripping operations to cyclic-flowline technology.

Transportation

Railroads are the the only type of coal and overburden transportation in the basin.

The intensive development of the basin's coal reserves through the deepening and expansion of pits makes it necessary to build and operate a large and complex transportation system. Railroad trackage totals more than 800 km, the annual volume of laborious track relaying work exceeds 600 km, and will grow another 35-40 percent over the next 3-4 years. Haulage distance is steadily increasing and already exceeds 15 km.

The association's rolling stock consists of around 1,700 diesel locomotives, electric locomotives, traction sets, dump cars, freight cars of various types and diesel trains. The basic types of locomotives are: TE-3, TEM-2, YeL-1 26E-2M, OPE-1, PE-2M; dump cars -- 2VS-105, VS-136 and 2VS-180. A considerable part of the fleet is obsolete or obsolescent. Together with the difficult transportation layout and the long haulage distance this creates additional difficulties through the great loss of time for repair and rebuilding operations and the lack of correspondence between actual and planned working conditions. In 1982 total locomotive idle time was equivalent to 20 percent of the fleet's working time.

The plan for the Stepnoy stripping pit calls for the use of three unit OPE-1 traction sets with an adhesion weight of 360 tons and 136 ton dump cars. In actuality use is made of two unit sets with an adhesion weight of 240 tons. Because of this train capacity is 95 m³ and daily productivity 900 m³ less than planned. For this reason alone the pit is 20-25 percent short of the stripping plan.

The low (1.65 kV) voltage of the power supply system is a factor delaying growth in productivity at the Severnyy pit. Characteristically, even somewhat of an increase in the weight norms of trains with PE-2M traction sets in recent years could not halt the decline in daily productivity. To a considerable extent this is explained by the substantial drop in system voltage due to overloading, making it impossible to attain the planned traffic speeds. The conversion to a 3.3 kV system is being unjustifiably prolonged, even though this would not only assist in the wider use of improved PE-3T traction sets with thyristor controls and 600 m³ capacity trains, but would also permit a 12-15 percent increase in the productivity of PE-2M sets.

It is essential to accelerate the development and introduction of improved design eight axle dump cars meeting operational requirements. An experimental group of such dump cars is being tested at the Severnyy pit. The 180 and 136 tons dump cars now being used hinder the steady operation of rail haulage, especially on movable track. The large share (up to 60 percent) of movable track is a reason for the large amount of track work. To carry out such work the association has 139 units of track machinery, including the VPO-3000, VPRS-500, VPR-1200; UK-25/9 track laying cranes, rail mounted cranes, bottom dump hoppers, ShPM-02 tie inserters, PRM-3 lift and alignment machines and others. A track machinery station (TMS) has been built, a gravel quarry put into operation and track conditions and repairs improved. However, much remains to be done. The TMS, for example, only meets 50-60 percent of the enterprise's needs, including 10 percent of assembled track and tie set repair needs.

Comprehensive work is essential to improve the upper structure of track in order to increase allowable axle loadings of rolling stock and improve operating conditions. Operating norms must be developed and metal ties used. In view of their great length (up to 5 km), face tracks should be partially converted to the semi-stationary category, put on the balance sheets and be given the appropriate current maintenance.

Repairs of Basic and Auxiliary Equipment

The plan divides the association's repair enterprises into two groups. The first group includes facilities supervised by the association and servicing all pits and other of its enterprises (the plant for the repair of mine transportation equipment, the mechanization administration, PTU [Possibly: production and technical administrations] repair enterprises and motor vehicle garages). The second group includes services of pits and PTUs themselves, doing the repair and technical servicing of mine transportation equipment not included in the programs of facilities in the first group.

The plant for the repair of mine transportation equipment is the association's main repair enterprise. It performs 7.7 million rubles worth of repair work annually. Since 1980 the centralized repair of single bucket and bucket wheel excavators has been organized here. However, the plant's production and technical capabilities prevent it from repairing the association's entire fleet of excavators. In 1982 it met 46 percent of the association's needs for centralized repair. Because of lagging in the construction of repair enterprises in the first group, in the immediate years ahead their output volume will not be near the required level.

The line equipment at repair enterprises is intended for the repair of Yel-1 and Yel-2 electric locomotives, EKG-4.6 and EKG-8 excavators and dump cars of up to 100 ton capacity, and is not capable of repairing bucket wheel excavators, EKG-12.5, EKG-8i and ESh-10/70A excavators; OPE-1, PE-2M locomotives or 2VS-105 and 2VS-180 dump cars. The mechanization administration does the centralized repair of buildozers and tractors. In 1982 there were 31 major, 23 medium and 22 current repair jobs. This was not an insignificant share of repair requirements. Repair enterprises have non-standard equipment, but there are not enough process line fittings, test stands or qualified repair personnel, especially machine tool operators.

As a consequence of the unsatisfactory supplies of spare parts, repair enterprises are compelled to build some complicated items for which they do not have the necessary metal cutting and heat treating equipment. Mine transportation equipment is repaired by the individual method. There is no parts exchange and units do not have the required material-technical readiness. For these reasons equipment idle time during repair amounts to 10-55 percent of calendar time. The association has outlined a number of measures to liquidate shortcomings in repair operations. These include: the operational introduction of a rolling stock repair shop at the transportation repair plant, the construction of the first section of a shop for traction set and diesel locomotive current repairs and technical inspection at the Tuz station, the use of elements of the component repair system for excavators and the setting up of a parts exchange, the expansion of centralized repair, and other measures.

Planning and Reconstruction of Pits

Of the four ETEK pits now in operation, two -- the Severnyy and the Bogatyr' -- require radical reconstruction. This primarily involves a review of the haulage layout and means of transportation in order to support the required levels of extraction with high techno-economic indicators. A third pit is being built. This is the Vostochnyy: the introduction of its first section is planned for 1984. A fourth, the Maykyubenskiy, located 65 km from Ekibastuz, as yet has only been provided with scientific and design studies at the TEO [Techno-economic substantion] stage.

The engineering plans for the reconstruction of the Severnyy pit, which were made by Karagandagiproshakht [Karaganda State Institute for the Planning of Mines], call for annual capacity to increase from 22 to 35 million tons of coal. The following basic solutions to pit reconstruction are outlined: the

complete conversion of extraction operations to bucket wheel technology, increasing bank height to 15 meters and cutting new horizons by bucket wheel excavators working together with reloaders; the replacement of EKG-8 excavators by EKG-12.5s, increasing the height of stripping banks to 20 m; the organization of second levels at spoil banks, increasing their height to 60 m; the conversion of intra-mine railroad power supply from 1.65 kV to 3.3 kV DC and the introduction of PE-3T traction sets with adhesion weights of 372 tons; the improvement of the intra-mine transportation layout through the shift to a two bank system of working coal seams and the installation of permanent haulage lines on the western side to prepare stripping horizons on the eastern side and the lower coal horizons.

Pit reconstruction began in 1978. However, it is lagging considerably behind planned deadlines because of delays in the conversion of electric traction to 3.3 kV, shortfalls in the delivery of the main equipment (EKG-12.5s and PE-3Ts), reductions in the rates of construction and installation work due to the lack of sufficient capacity on the part of contracting organizations in the Ekibastuzshakhtostroy [Ekibastuz Mine Construction] Combine, the Pavlodar Transportation Construction Trust, USSR Ministry of Power Engineering and the KaSSR Ministry of Highways. These delays are not only hindering increases in pit capacity, but also making it considerably more difficult to support the present levels. The organizations at fault for this situation should make every effort to eliminate their liabilities.

Simultaneously with the engineering plan, an outline has been developed for a general plan for pit development, increasing its capacity to 50 million tons annually. In accordance with UkrNIIproyekt recommendations, there are provisions to completely convert extraction operations and partially (53 percent) convert stripping operations to mixed railroad-conveyor haulage. This solution was dictated by the character of changes in pit parameters and the techno-economic indicators of its operation with railroad haulage in view of the steady increase in working depth. Studies show that by the time 50 million ton annual capacity is attained, the pit will be around 230 meters deep, the average distance of coal haulage will be 22 km and of overburden haulage -- 16-18 km. The average daily freight turnover of coal will exceed 3.2 million ton-kilometers. Using combined haulage the average distance will only be 9 km and the daily freight turnover moved by rail will only be 1.2 million ton-kilometers, i.e. a decline of almost 2.7 fold.

Coal will be conveyored to the surface by five lifts with a productivity of 2,500 m^3/hour each, located in inclined shafts. Such flow line haulage will simplify surface facilities. As only some of the coal will be blended, it is intended to build 2 blending storage facilities with a capacity of 75,000 tons each and three accumulators of 50,000 tons each. At each stage it's planned to store the coal in two stacks. The equipment for the receiving section of the facilities is identical and includes conveyors and stackers. Various types of loaders will be used at different stages: special blending machines at the blenders, and rotary loaders at the accumulators (See Figure 2.). This will guarantee the effective blending of coal and its timely shipping to customers.

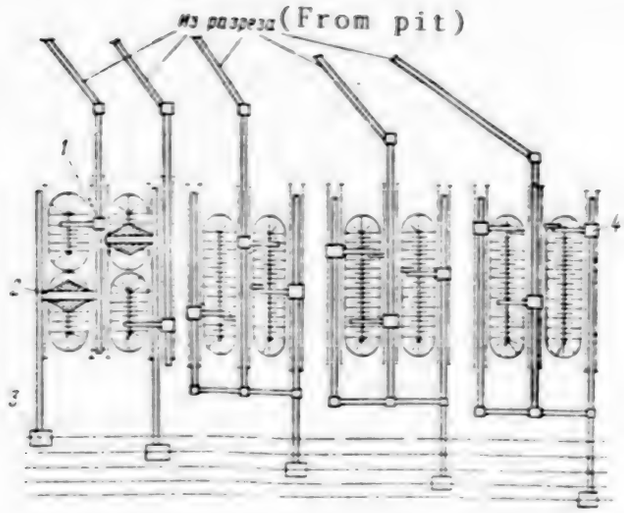

Figure 2. Flowsheet for Blender-Loader Facility at Severnyy Pit.

Key: 1. Stacker
2. Blender-Loading Machine
3. P-4V Loading Point
4. Rotary Loader

The volume of overburden rock haulage by combined and railroad transport is distributed proportionally to its volume by depth, defined as the zone of direct railroad approaches. Overburden rock from horizons located below these approaches will be moved to spoil banks an average distance of 6.5 km by 4 conveyor stackers with productivity of 4,000 m^3/hour (7,000 tons/hour) each. There it will be stacked in two layers (50 and 30 m high) by OShS-4,000/125 spoil bank stackers. Each will be loaded by conveyors from two independent crusher-reloaders with a productivity of 2,000 m^3/hour each (See Figure 3.). The estimated time of unloading 11 VS-180 dump cars is about 15 minutes.

Compared to the presently used system, cyclic-flow line technology will bring more stable techno-economic indicators, as operating conditions for each of the elements will be close to optimal in spite of the steady increase in pit depth. Unfortunately, there are a number of factors hindering the introduction of this progressive technology (the two side development of mining operations, large capital investments, weakness of the construction base, problems in the production of conveyor equipment of the necessary types and sizes, etc.).

To provide scientific support for new technology it is essential to organize experimental-industrial sections in the basin to work out various engineering solutions and train personnel to work with new equipment. When one takes into consideration the magnitude of the potential introduction of continuously operating equipment, the costs of creating such sections will undoubtedly be paid off.

In its engineering plan for the 30 million ton annual capacity Vostochnyy pit now under construction Karagandagiproshakht intends to use a conveyor coal haulage layout that will have no analogues in the practice of surface

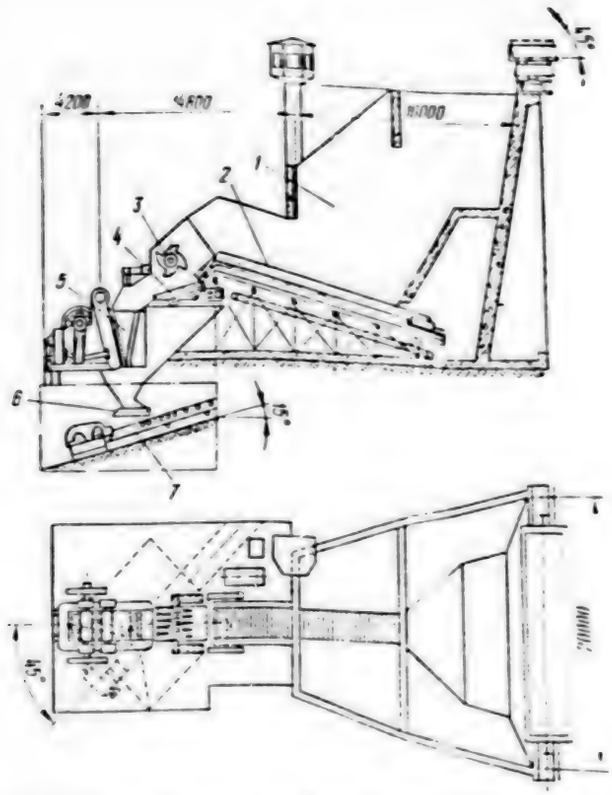

Figure 3. Variant of Layout for 2,000 m^3/ hr. Crusher-Reloader

Key:
1. 700 m^3 bunker
2. Plate-type feeder, 1-24-150
3. UKR crusher
4. Vibrating screen
5. ShchDP-15x21 jaw breaker
6. Conveyor feed
7. 4,000 m^3/hr. belt conveyor

mining operations throughout the world. It is unique in that face conveyors will be oriented along the strike of the strata, lying within the pit field at angles of 10°-30°. After a horizon's reserves have been extracted, the conveyors will be shifted periodically, once every 3-4 years (when working the upper zone to a depth of 80-100 m) with the advancing work front. Together with connector conveyors, they will be dismantled, moved and reassembled at horizons being developed. Such a layout, with interblock units temporarily completely under centralized connector conveyors makes extremely high demands upon production organization, technological discipline, the standards of automation, technology and comprehensive mechanization of auxiliary processes, the technical repair and servicing system and the skills of workers and employees. The sector's science has an important role in the solution of these problems.

The blender-loader complex includes a system of distribution conveyors and four blender storage facilities of the same design as at the Severnyy pit, three loading points (for internal overburden rock as well).

The plan calls for practically all new conveyor equipment. The engineering objectives for its creation were worked out by the Novo-Kramatorsk Machine Building Plant Association, UkrNIIproyekt and Karagandagiproshakht with the

participation of Ekibastuzugol'. Nevertheless, the conveyors have not yet been built, even though the start-up of the first section is intended for 1984. Problems in the manufacture of auxiliary equipment sets have also not been solved. It is essential to take immediate measures to deliver the necessary equipment to the pit on time.

The basin's traditional technology, using single bucket EKG-12.5 excavators and railroad haulage is planned for stripping operations. UkrNIIproyekt and Kuzbassgiproshakht have determined that the preferable technology for coal extraction work at the future Maykyubenskiy pit will be cyclic-flow line with single bucket excavators and combined truck and conveyor haulage. The traditional layout for stripping work at Ekibastuz pits has been affirmed by techno-economic substantiation.

A three year program of NIOKR [scientific research and experimental design work] has been planned as part of the general scheme for the exploitation and development of the Ekibastuz basin. It includes 12 themes covering various facets of mining development at ETEK. These will be done essentially by all main sector institutes and by organizations in related ministries and departments.

Mining operations are only one component part of ETEK, so their development should be subordinated to the development patterns of the entire region and of the fuel and energy base of the country as a whole. It is apparently time for a coordinated, comprehensive approach to solving all problems of the great Ekibastuz.

Thus, in order to ensure the step-by-step development of ETEK the following is necessary:

1. Considerable strengthen the construction base of the coal component, strictly observe equipment assortment and manufacturing and delivery time frames, strengthen plan and technological discipline, guarantee key personnel's stability and high professional standards.

2. Radically reconstruct the Severnyy and Bogatyr' pits through the widespread introduction of continuously operating equipment, primarily conveyor transportation at extracting and stripping operations.

3. At operating enterprises more widely use existing reserves for improving labor productivity and output quality and for enhancing the techno-economic indicators of coal extraction. These include:

a. The blasting preparation of rock masses: increase the use factor of drill units through improvements in the organization of labor and repair work; modernization of the drill unit fleet, replacing obsolete models with new SBR-160A, 2SBSh-200MN, SBSh-250-55 and BTS-150 units; organize a single blasting facility; reduce the number of shots through the conversion to large shots; search for rational parameters for blasting operations which would make it possible to increase the height of stripping banks to 20 m, increase blasting operation mechanization levels by supplementing the charge loading machine fleet with MZ-4 machines;

b. Excavation: Accelerate the transition to a single type of equipment within one pit (first of all extraction pits); expand the use of bucket wheel excavators through their introduction in the cutting of extraction horizons, the use of P-1600 reloaders and the construction of new interbank reloaders with productivities of up to 5,000 m^3 per hour; expand the use of EKG-12.5 and EKG-6.3u excavators at stripping operations; increase the mechanical reliability of excavator parts and components; improve excavator utilization through more precise work organization and the reduction of emergency rates during excavation and related processes;

c. Transportation: eliminate lagging in the development of transportation layouts, constructing permanent haulage lines on the western side of the Severnyy pit, and at the tie-in and coal stations, both in new directions and at transfer points; accelerate the reconstruction of traction substations, the power supply system and feeders, converting to 3.3 kV in order to increase train capacity and speed at the Severnyy pit; modernize rolling stock through the introduction of PE-3T traction sets and more improved 145 ton dump cars; increase, to 16 cars, the weight norm for coal delivery at the Bogatyr' pit by using three unit OPE-1 sets with an adhesion weight of 360 tons and lengthening dead end tracks at stations and posts within mines; improve track work mechanization levels and quality;

d. Technical servicing and repair: in 1985 -- operationally introduce a rolling stock repair shop at the mine transportation equipment repair shop; begin construction of shops for the current repair and technical inspection of traction sets and diesel locomotives at the Tuz station; operationally introduce the first stage of the construction of the maintenance of way base; in 1983-1984 -- organize a permanent repair site for fixing excavators under field conditions; use the component repair system at the plant for mining equipment repair, creating the appropriate components and parts exchanges; expand the volume of centralized repair of excavators at the mining transportation equipment repair plant.

4. Work out a general scheme for the region's development, taking into consideration, ecological, social, technical and other factors.

This program's implementation will assist in the fulfillment of the basic decisions of the CPSU 26th Congress concerning the development of the country's fuel and energy base and the more rational use of natural, labor and material resources.

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COAL

PROGRESS AT EKIBASTUZ COAL COMPLEX OUTLINED

Tselinograd FREUNDSCHAFT in German 21 Feb 84 pp 1-2

[Article by Petr Yerpilov, first secretary of the Pavlodar Oblast Committee of the Communist Party of Kazakhstan: "Years of Intensive Building Work"]

[Text] The workers of Pavlodar Oblast, which is decorated with the Order of Lenin, are preparing a worthy tribute to the glorious 30th Anniversary of the Openin Up of the Virgin Lands through high labor productivity and successes in socio-political life. On the eve of this jubilee we are surveying the most recent past in our thoughts. Pavlodar was one of the areas of Kazakhstan into which trains carrying future virgin lands developers and high-capacity agricultural machines, construction materials and means of transportation, rushed in the early spring of 1954. The first group arrived in our area in February 1954 from Alma-Ata. After a week a group from Moscow arrived here, followed by the emissaries from the Tambov, Orel and Tula oblasts. However, trains from Leningrad, the Ukraine, Belorussia, Transcaucasia, the Baltic and other republics and oblasts of the country were already on the way. During the first year alone, more than 10,000 new settlers arrived in the oblast. These included qualified specialists and people of various professions, who were able to cope with any task and were also willing to fulfill them.

Beginning with the first days of the opening up of the virgin lands, the sovkhoz and kolkhoz workers felt the constant care and attention on the part of the party and the entire Soviet people. All union republics took part, with great patriotic impetus, in the equipment of the virgin lands sovkhoz with tractors, soil cultivation, harvesting, and grain-cleaning machines. During the same year of 1954, the oblast received thousands of new haulers, combines, and a lot of other machines.

In 1954 28 new grain sovkhozes were established in the oblast, including the Lenin, Kuybyshev, Golubovkiy, 19th Party Congress, Krasnokutskiy, Sovetskiy Kazakhstan, and other sovkhozes. And already during the first year of the opening of the virgin lands, more than 1 million hectares came under the plough. During the years 1954 and 1955, the grain fields were increased nearly fourfold and brought up to 2,395,000 hectares.

A serious test for the party organization and all workers in the agriculture of the oblast was the harvest of 1958. About 124.5 million poods of grain were

poured into the state granaries at that time. For this achievement, the oblast received the Order of Lenin, the highest government award. During the past 30 years, it produced more than 2 billion poods of grain.

The development of the virgin and fallow land entailed great difficulties. These were complicated still further by the devastating wind erosion of the soil. Its control was the goal of the entire organizational and political work among the masses, as well as the entire scientific and production potential of the oblast. An effective, comprehensive, soil-conserving system of agriculture was developed and successfully introduced in agriculture. By the beginning of the 8th Five-Year-Plan, wind erosion had essentially been overcome. Thereupon a systematic growth of plant production could be attained and the feed basis for animal husbandry could be secured and thus its further development could be assured.

Considerable progress could be registered in animal husbandry. There was an increase in the inventories of cattle, sheep, hogs, and poultry, and there was an increase in animal and poultry output. As a result, the possibility presented itself to bring about a significant increase in the sale of meat, milk, eggs and wool to the state during the years ahead.

There was intensive development of the irrigated agriculture. The irrigated surfaces come to 120,000 hectares. By the end of the current five-year-plan, this figure is supposed to increase to 150,000.

Since the beginning of the virgin lands epopee, approximately 3 billion rubles were claimed by the agriculture of the oblast alone. Within a relatively short time, highly-mechanized large-scale agricultural enterprises came into being here. While there were about 31 sovkhozes in the oblast in 1953, there are presently 126. Many of these, which were newly established here, are now models of highly-efficient agricultural enterprises.

For outstanding achievements, numerous virgin lands farmers were awarded the title of Hero of Socialist Labor, including T. V. Volkov, P. F. Musyka, Y. G. Hering, N. M. Sokolov, I. I. Bykmukhmet, and others.

At present 35,000 people in agriculture are recipients of rders and medals. These are the best people of the oblast. Their devoted and noble work is a sure guarantee for new achievements and victories. The young virgin lands farmers are following in the footsteps of their fathers and older brothers. Whole dynasties of specialists in agricultural mechanization.

With good reason, the beginning of the development of the virgin and fallow lands is regarded by us as the beginning of the current biography of the Pavlodar Oblast with all of its rayons. With the first stake in the construction of the tractor plant and the first furrow in the virgin lands, an efficient territorial complex came into being, with powerful energetics, extensive machine building, solid ferrous and non-ferrous metallurgy, chemical, petroleum and fuel industry, and a highly-mechanized agriculture.

Hand in hand, shoulder to shoulder, Russians, Kazakhs and Germans, Ukrainians and Belorussians, Latvians and Lithuanians--representatives of about 100 nationalities and peoples of our country--have conquered and developed the steppes of the oblast. Since the first years of the development of the virgin lands, multinational collectives and teams, international marriages and families have become an everyday phenomenon.

Thanks to the rapid growth of the economy, our cities and villages are being transformed, the prosperity of people is increasing, their cultural level is rising, and their working and living conditions are improving. In the at one time uninhabited desolate steppe, modern settlements with schools and hospitals, clubs and trade centers have come into being during the past 30 years. Let us turn to the Kolkhoz 30 Years of the Kazakh SSR--a leading agricultural enterprise of the oblast. In its modern central settlement there is a music school and a House of Culture. In the Kolkhoz there is a stable collective of specialists in mechanization, doctors, teachers and cultural workers. In terms of their building facilities, the central settlements of many kolkhozes and sovkhozes can compete withthe cities.

The consolidation of the material-technical basis and the devoted work of the employees in agriculture are producing gratifying results. The workers in the agriculture of the oblast have fulfilled their state plans with respect to the purchase of meat, milk, eggs, vegetables and potatoes for the past year and the first three plan years.

The Pavlodar-Ekibastuz territorial complex, which at the 26th CPSU Congress was described as one of the large-scale complexes of the country, has undergone dynamic development during the first three years of the 11th plan period. The country received petroleum products, tractors and clay above the plan. The enterprises of the light and food industry increased their production output.

Special attention is being given to the more rapid realization of the Ekibastuz fuel-energy complex. This is the main task which the oblast party organization has been given by our party and government. Since the beginning of the current five-year-plan, approximately 100 million rubles in investments have been laid claim to here--which surpasses the achievement of the 10th Five-Year-Plan for the corresponding period by a factor of 3. In 3 years the coal producers of Ekibastuz, together with the traffic workers ofthe Ekibastuzugol [Ekibastuz Coal] Production Association, dispatched about 2 million tons of coal to the thermal power plants of the country. The construction of the overland power station No 1 will soon be completed; its output will reach 3.5 million kilowatts. The capacities of the thermal power stations in the oblast come to about 7 million kilowatts, which amounts to more than half of the output of all power plants in the republic.

During the past few years the production of more than 300 new industrial products was begun in the oblast; the share of products of the highest quality category in the total production volume increased by 36 percent. Complex systems of quality control are operating in 72 industrial enterprises of the oblast.

From year to year there is an increase in the investments in the construction of apartments, social, cultural and other public institutions. During the

first 3 years of the current plan period, the workers of the oblast received 60,000 square meters more living space than during the corresponding period of the past five-year-plan. As a result, 120,000 persons were able to improve their living conditions.

The successes in cultural and economic development did not come by themselves, they had to be achieved. They are the result of the devoted work of the workers, kolkhoz farmers and intelligentsia--of all the workers of the oblast, the result of a colossal organizational and ideological educational work of the party, state, trade union and Komsomol organs. The party organizations support and propagate valuable initiatives, which have come into being in the production collectives: "Utilize Every Technological Complex and Every Aggregate Up to the Planned Capacity", "High-Grade Products With Minimal Energy Expenditure", "Collective Responsibility for High Work Discipline", and others. In industrial, construction and agricultural enterprises, people are persistently struggling for the maximum utilization of all reserves, for the reduction of production costs and the improvement of production quality.

Much has already been done, still more work lies ahead of us, however. From the standpoint of the decisions of the June and December Plenums (1983) of the CPSU Central Committee and the recently adopted decision of the Central Committee with respect to the activity of the Central Committee of the Communist Party of Moldavia regarding the perfection of the system of guidance, the style and the methods of work, the oblast party organization has critically assessed its achievements and shortcomings; now it is ascertaining new reserves and setting itself realizable, well-founded tasks for the future.

In the course of the comprehensive socialist competition in honor of the impending elections to the USSR Supreme Soviet and the 30th anniversary of the beginning of the virgin lands action, the workers of the oblast's industry intend to produce products valued at 6.5 million rubles above the annual plan; the construction workers intend to turn over 400,000 square meters of living space to their destination; the sovkhozes and kolkhozes plan to sell 212,000 tons of milk, 92,000 tons of meat, 2,510 tons of wool, 750,000 tons of grain, as well as other animal and plant products to the state during the current year. Those are taut, but sound plans. In his speech at the December Plenum (1983) of the CPSU Central Committee, comrade Yu. V. Andropov said: "According to the party, the task can be stated only as follows: The strict fulfillment of the plan must be secured, but we also must exhaust all possibilities for its overfulfillment. The entire economic activity, the socialist competition, the economic, organizational and ideological and educational work of the party, the trade union and Komsomol organizations, as well as the local soviets, must be directed towards this." With a view to this, the communists and all work collectives of the oblast must make rational use of the colossal investments made available by the state, must manage the economy economically everywhere, must confirm the principle of economy and exhaust all internal reserves for the realization of the tasks of the five-year-plan. All of this requires the continued consolidation of work and production discipline, and the development, in every worker, of the feeling of personal responsibility and participation in the affairs and interests of every enterprise and office.

Continuing to cultivate the valuable traditions that came into being in connection with the gaining of the virgin lands, the workers of the Pavlodar Oblast will struggle still more actively and persistently for the realization of the decisions of the 26th CPSU Congress and the subsequent plenums of the CPSU Central Committee, attain new successes in the realization of the food and energy program, and successfully fulfill the plans of the 4th plan year and the entire five-year-plan.

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CENTRAL ASIAN COAL INDUSTRY DEVELOPMENTS SURVEYED

Moscow UGOL' in Russian No 12, Dec 83 pp 12-13

[Article by A. I. Leleko, general director, Sredazugol' [Central Asian Coal] Association: "Prospects for the Development of the Coal Industry in Central Asia"]

[Text] In the 11th Five-Year Plan it is intended to improve the technical standards of production at the Sredazugol' Association in the following ways: The further expansion of coal extraction by surface methods through the introduction of highly productive transportation equipment at pits, increases in the productivity of excavators and in the capacity of rail cars and trucks; the reconstruction of the Angren and Agulak pits, the construction of the large new Kara-Kiche pit; improvements in development systems used in mines; work concentration through increases in loadings per working face, wing and seam; expansions in the mechanization of coal extraction and transportation; increases in the use of combines for driving mine workings and in the introduction of stronger supports and improvements in underground haulage and surface systems at mines.

As of 1 January 1983 the productive capacity of the association's mines and pits was 10,480,000 tons. In 1982 the association extracted 10,424,000 tons of coal, of which 67.4 percent was by strip methods. Coal extraction by such methods will be further increased through the reconstruction of the Angren pit. During this reconstruction period, it will be necessary to remove 275.7 million cubic meters of overburden to prepare reserves for extraction. The following machinery will be used: EKG-12.5, EKG-8i and ESh-15/90 excavators (67), DET-250 bulldozers (68), and 2SBSh-200H drill units for inclined drilling (35).

Great importance is being placed upon railroad transportation at the pit, since by the completion of reconstruction, haulage will amount to 137,600,000 tons. After the second and third rock tracks are laid, there will be 680 km of tracks, of which 560 will be electrified. All coal and overburden will be hauled by 54 PE-2 locomotives, while the rolling stock fleet will be increased to 500 large capacity dump cars. A mine transportation equipment repair plant will be built to maintain locomotives and cars. It is planned to convert traction units to 3,000 volts, considerably improving railroad transportation's operational potentials.

An automated system for the management of technological processes (ASUTP) will be introduced at the pit.

The introduction of improved engineering, new equipment and automation has considerably improved labor productivity.

It is intended to complete the reconstruction of the Kyzyl-Bulak pit in the Kirghiz SSR, increasing its productive capacity by 300,000 tons annually. The pit is being supplied with the following highly productive mine transportation equipment: EKG-8i, EKG-5 and ESh-10/70 excavators, 75 ton BelAZ-549 dump trucks, 40 ton BelAZ-548 dump trucks and 2SBSh-200 drill units. This will make it possible to complete the required amount of stripping work within the planned deadline and bring the pit up to planned capacity.

Work is under way to modernize the Almalyk pit, increasing its capacity to 500,000 tons. In the long term coal strip mining will be developed in northern Kirghiziya. It is planned to build the 3,000,000 ton capacity Kara-Kiche pit together with a thermal power plant near the deposit. Simulaneously, as a result of the development of new sections of the Tura-Kavakskaya coal area, it is planned to increase the Agulak pit's capacity to 1,000,000 tons.

In the south of the republic, in Osh Oblast, it is intended to build the Kumbel' pit, with a capacity of up to 1,000,000 tons, and the 300,000 ton Samarkandek pit. These will, to a considerable extent, meet this region's demand for coal.

Parallel to the development of strip mining, there will also be growth in the productive capacity of underground mines. In the Uzbek SSR it is intended to rebuild Mine No. 9, increasing its capacity by 200,000 tons. It is planned to do this by sectioning 18 million tons of reserves and introducing mechanized complexes at loading operations. All mine development work is being done with the help of GPK and 4PU tunnel driving combines. Coal and rock will be moved from faces to the surface completely by conveyors, and it is planned to use 6DMKU freight and personnel monorails to haul materials and equipment. In the immediate future the mine will become a completely mechanized enterprise.

At the Angren field it is planned to build the Ablykskaya and Nishbashskaya mines (900,000 tons each), while in Surkhan-Darya Oblast the 300,000 ton Baysun Mine will be built. At the Mine imeni Leninskiy Komsomol, Kyzyl-Kiyskoye Mine Administration, opening and preparation work is under way at the + 500 meter level and the skip shaft is being deepened from +750 m to + 500 m. This will make it possible to increase the mine's capacity to 400,000 tons. Simultaneously, the problems in rebuilding the mine's ventilation systems will be solved. The use of industrial air conditioners will create comfortable working conditions in the mine. According to data from exploratory work, the favorable bedding of the seam in the mine's eastern wing will make it possible to use mechanized complexes to extract coal.

At Mine № 6/18, Sulyukta Mine Administration it is planned to open and develop the new + 950 m horizon. According to preliminary exploration data, extraction areas below +1,050 are more gently sloping, of uniform altitude and thickness and could be worked by OKP-70 mechanized complexes.

The Kok-Yangak Mine is developing three seams in a very complex structure with a branched network of tectonic dislocations. This causes definite difficulties in working stoping sections and is leading to increased losses of coal underground. In view of the commercial reserves left in the operating horizon it is planned to open and develop a new horizon at + 1,000 m. Coal is now being extracted by mechanized complexes and combines with individual hydraulic supports. In order to improve efficiency it is necessary to replace the present OKP-10 complexes with OKP-70 and MK-75 complexes and transport coal on horizontal haulage ways using the SP unit trains with VDK-2.5 mine cars. The plan for opening and developing horizon + 1,000 m provides for the comprehensive mechanization of breakage, development and auxiliary work. When this horizon is put into operation the mine's capacity will increase to 700,000 tons annually.

At the Tsentral'naya Mine there are plans for reconstruction and the opening of a new horizon in conjunction with the sinking of a second vertical shaft, the introduction of which will eliminate the discontinuity in underground haulage, reduce the distance of supported workings and improve mine ventilation. At present both working and development faces are being worked by the drill and blast method. By 1985 it is planned to introduce tunnel driving combines for development workings and an extraction combine for longwall work in seam 1.

At the Dzhergalan Mine there are provisions for opening and developing a new horizon at + 2,130 m in which it is intended to have two working faces in the west and east wings of the mine. This will permit a 33 percent increase in coal extraction volume. To eliminate discontinuities in transport it is intended to run an inclined transport conveyor from the Kapital'naya Mine's horizontal gallery to the lower horizon. When this is done, underground transportation will be completely by means of conveyors, from face to surface.

Together with the development of new horizons and the technical modernization of operating mines it is also planned to build new coal extraction enterprises.

In 1983,to replace the Severnaya Mine, which was closing, construction began on the Tegenek Mine in the Tash-Kumyr Mine Administration. At this mine all processes at working faces, development workings and coal transportation will be completely mechanized. UKP type mechanized complexes will be used at working faces and GPK tunnel driving combines in mine workings. Belt conveyors will haul coal to the surface facilities while personnel and materials will move along inclines and intermediate workings on 6DMK freight and personnel lines. Electric locomotives will be used for auxiliary operations in horizontal workings and single lift hoists in inclined ones.

At the Sulyutka field there are now two mines in operation, having a total capacity of 400,000 tons. Mine No. 2/4 is depleting its reserves at existing horizons and should be closed in the not too distant future. To replace it, the construction of Mine No. 11, with a capacity of 900,000 tons annually is planned in a well explored field. The field's balance reserves amount to 82.7 million tons, including 66.7 million tons in A + B categories, for the large part smoothly bedded, with uniform thickness, making it possible to mechanize working faces and development workings.

With the operational introduction of Mine No.11 and the second section of the Kyzyl-Bulak pit, the capacity of the Sulyukta Mine Administration will more than double and amount to 1,800,000 tons annually.

At present PNIUI [Possibly: Perm Scientific Research Institute of Coal], KNIUI [Karaganda NUIU], VNIMI [All Union Scientific Research Institute of Mine Surveying], and Karagandagiproshakht are researching the potentials for developing the eastern wing of Mine No. 8. In the west wing of this mine there are 3 longwalls in operation, 2 of which are equipped with OKP-10 mechanized complexes, even though the seam's bedding conditions require their replacement by OKP-70 complexes. Coal is hauled to the skip shaft completely by conveyors.

Simultaneously with the construction of mines and pits there will be extensive construction of housing, cultural and service facilities and recreation areas. It is also intended to build an out patient clinic for 500 patients at Lake Issyk-Kul. In the 11th Five-Year Plan alone it is intended to spend 27.5 million rubles for such purposes.

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SYNOPSES OF ARTICLES IN UGOL' UKRAINY, NOVEMBER 1983

Kiev UGOL' UKRAINY in Russian No 11, Nov 83 pp 47-48

[Achievements of Ukrainian mines; tasks and measures]

UDC 658.516.622.26; Donetsugol'

EXPERIENCE WITH STANDARDIZATION OF PREPARATORY DEVELOPMENT WORK AT DONETSUGOL' ASSOCIATION

[Synopsis of article by A.M. Rud', pp 5-6]

[Text] Considers experience in development and introduction of a standardized system for part of the coal mining process, i.e., preparatory development work.

UDC 622.01.658.357.5; M. Gorkiy Mine

RHYTHM OF WORK AT THE MINE IMENI M. GOR'KIY DURING EXTRACTION OF THIN SEAMS

[Synopsis of article by V.I. Prishchepa, pp 7-9]

[Text] Results of work, improvements, mechanization, and restoration. Stripping of new reserves, technical and economic indicators and tasks are considered. 1 table, 1 illustration.

UDC 622.268.13; Barakov Mine

WORK EXPERIENCE OF P. YE. KUKNERIK'S DRIVING BRIGADE

[Synopsis of article by Yu. F. Moiseyenko, pp 9-10]

[Text] Work organization in the vanguard brigade. Technical and economic indicators, responsibilities and implementations are considered. 1 illustration.

UDC 622.26; Yuzhnodonbasskaya Mine No 3

COMBINE DRIVING: AN EFFECTIVE METHOD FOR DEVELOPMENT WORK IN THE YUZHNODONBASS MINE NO 3

[Synopsis of article by N.F. Borodulya, pp 11-12]

[Text] The use of the combine for development work in the Yuzhnodonbass Mine No 3 is an initial objective of the 11th Five-Year Plan. Achievements of the driving brigade and its work organization are considered.

UDC 622.268.001.8; Mine imeni Lutugin

SPEED DRIVING OF A THROUGH-CUT

[Synopsis of article by V.I. Malov, pp 11-12]

[Text] At the Lutugin Mine, Torezantrasit Association, a through-cut 185 m long was driven in 17 days. Work organizations and technical and economic indicators are considered. 2 illustrations.

UDC 622.232.75; Cold Beam

EXCAVATION OF EXTREMELY THIN LAYERS BY MEANS OF SCRAPER-PLOWS

[Synopsis of article by V.V.Serbin, pp 14-16]

[Text] Technology and organization of coal excavating operations during use of scraper-plows provides test results. 3 illustrations.

UDC 622.85.2.622.86→614.283

CONDUCT OF OPERATIONS IN DANGEROUS WATERFLOODED AREAS

[Synopsis of article by I.F. Sliz'ko, pp 16-18]

[Text] Determination of dangerous zone boundaries in the Dneprovsk Basin and safety measures for carrying out mining in these zones. 4 illustrations, 1 reference.

UDC 622.283.5.624.012.36

STRENGTHENING OF ARCH SUPPORTS BY MEANS OF TIE RODS

[Synopsis of article by I.P. Kurchenko, V.D. Troyan, N.S. Beskorovaynyy, pp 19-20]

[Text] Results of tests of flexible tie pieces in the Voroshilovgrad Mine No 1, design and technology for the installation of ties, necessary tension, application effectiveness and durability are considered. 3 illustrations.

UDC 622.016.62.622.5

EFFECT OF SPEED IN DEVELOPING FACE ON AMOUNT OF WATER PRODUCTION

[Synopsis of article by V.P. Pertsev, pp 20-21]

[Text] Results of modeling the process of working in fissured rock conditions in the Donbass are considered. The insignificant increase in water flow at the breakage face when development speed is increased from 2.5 to 10 m/day is discussed. 3 illustrations.

UDC 622.01.338.94

SOCIAL AND ECONOMIC EFFECTIVENESS OF THE RE-EQUIPMENT OF THE UKRAINIAN MINING INDUSTRY

[Synopsis of article by F.I. Yevdokimov, S.Ya. Salyga, pp 22-23]

[Text] Proposals are given for determining the social and economic effectiveness of the technical re-equipment of the UkSSR Minugleprom mines. 4 references.

UDC 622.333.658.5

EFFECT OF THE EFFICIENCY OF UTILIZATION OF PRIMARY RESERVES ON NET COST OF COAL

[Synopsis of article by R.S. Karenov, p 24]

[Text] A method is given for estimating the effect of efficient use of productive assets on net cost of coal based on the "depreciation" factor. The mathematical economic relationship of net cost of coal to asset size of reserves is considered. Examines measures to lowering net cost of coal as a result of rational utilization of principal coal reserves.

UDC 622.272.8

IMPROVING UTILIZATION OF MINE PRODUCTION CAPACITY

[Synopsis of article by F. Beda, p 25]

[Text] The relationship of the effective utilization of mine production capacity of the Ukrzapadugol' Association's Mines to a series of technical mining factors. Examines influence of the level of mine capacity utilization on their operating indicators.

UDC 69.003.658.012.2

OPTIMIZATION OF A SERIES OF MEASURES CONCERNING MATERIALS ECONOMICS

[Synopsis of article by A.P. Chayka, V.I. Maydanov, p 25]

[Text] A mathematical economic model is considered for the optimization of a series of measures concerning economical use of materials.

UDC 622.411.332

DESIGN REQUIREMENTS FOR STOPING COMBINES AS RELATED TO THE GAS FACTOR

[Synopsis of article by A.I. Babrov, pp 26-27]

[Text] Design of stoping combines that prevents formation of dangerous methane accumulations in the coal extraction zone. Discusses efficient distribution of work units. 1 illustration.

UDC 622.232.8.004.067

TESTS OF THE MODERNIZED IMKM UNIT UNDER COMPLICATED THIN SEAM CONDITIONS

[Synopsis of article by V.N. Briling, V.Ya. Daubert, T.V. Kim, pp 27-28]

[Text] Design and test results of the modernized IMKM unit intended for cutting seams 1.15 to 1.4 m thick and with weak lateral media. 1 illustration.

UDC 622.232.72

THE POISK-2 NARROW-CUT COMBINE

[Synopsis of article by D.S. Kompaniytsev, p 29]

[Text] The Poisk-2 combine for steeply inclined and steep seams 0.36 to 0.75 m thick. Working principles and test results are discussed. 1 illustration.

UDC 622.232.83

IMPROVING RELIABILITY OF THE 4PP-2 DRIVING COMBINES

[Synopsis of article by G.V. Petrushkin, V.G. Semenyuta, G.A. Nedzvetskiy, p 30]

[Text] Results of experimental research on the process of forming maximum loads on the motor of the 4PP-2 combine's loading unit and recommendations on the adjustment of the safety couplings are considered. 2 illustrations.

UDC 622.67-192.658.152.011

ADVISABILITY OF TWO ENGINE MOTORS FOR TUNNEL BORERS

[Synopsis of article by V.S. Lisovskiy, P.A. Bazilevich, M.P. Kuznetsova, p 31]

[Text] Criterion for the advisability of two engine motors. The relationship of motor lifting capacity to the degree of loading of the skips. Examines formula for determining losses due to downtime of the lifting unit. 1 illustration, 2 references.

UDC 625.2.019.4.622.625.28.83

IMPROVEMENT OF THE SANDBOX SYSTEM OF ELECTRIC LOCOMOTIVES

[Synopsis of article by A.I. Lesnikov, p 32]

[Text] The possibility of maintaining sand in a dry state in the sandbox system of electric locomotives. Provides proposed design of unit.

UDC 622.232.002.5

RESEARCH ON THE DYNAMIC LOADING OF THE SOYUZ-19 COMBINE UNDER INDUSTRIAL CONDITIONS

[Synopsis of article by A.M. Levin, N.A. Svyatnyy, Ye. N. Iverovskiy, V.N. Evyagintsev, pp 32-33]

[Text] The values of the loading variation coefficient in the transmission of the rotary driving combine for various degrees of instrumental dullness and loading expectation levels are considered as well as the spectral composition of the loading on the shaft of the actuator. 1 illustration, 1 reference.

UDC 621.313.333.213.34.622.002.5.004.62

EVALUATING RELIABILITY OF MINING EXPLOSION-PROOF ELECTRIC MOTORS

[Synopsis of article by B.N. Baneyev, V.M. Gostishchev, p 33]

[Text] Evaluates factors which are taken into account in estimating the reliability of explosion-proofed electric motors used in mining. Provides a simplified method for estimating the average life of the motor prior to complete overhaul.

UDC 622.831.327."313"

EVALUATING THREAT OF BURSTS IN SEAMS DUE TO GAS

[Synopsis of article by A.Ye. Ol'khovichenki, A.I. Molozhan, V.M. Lapatukhin, pp 34-36]

[Text] An analysis of the experimental data with the intent to determine the most representative indicators of explosion threat due to gas. Discusses the basis for a new indicator for recognizing explosion danger for current, local and regional forecasting factors. 2 tables, 1 illustration, 1 reference.

UDC 622.41.519.24

SELECTION OF PARAMETERS TO MONITOR AIR CONSUMPTION FOR VENTILATION CONTROL

[Synopsis of article by V.A. Svyatnyy, S.S. Yefremov, p 36]

[Text] The selection of parameters for monitoring the flow of air depending upon the characteristics of the principal influences in the ventilation control process. 1 illustration, 2 references.

UDC 622.822.622.417.2

AIR TEMPERATURE IN DEEP MINE SHAFTS DURING REVERSE VENTILATION FLOW

[Synopsis of article by A.M. Gushchin, V.N. Shevchenko, V.L. Lobov, p 37]

[Text] Air temperature is considered in the shafts of four deep mines of the Donbass (Bazhanov, Kalinin, Zasyad'ko and Glubokaya) in the transition from normal to reverse ventilation mode. Provides recommendations. 1 illustration.

UDC 622.413.4

REMOVAL OF CONDENSATION HEAT FROM COOLANT WITH MINE WATER USING AN INTERMEDIATE HEAT-EXCHANGER

[Synopsis of article by Ya. I. Driga, A.K. Yakovenko, p 38]

[Text] A system for the extraction of condensation heat from coolant by means of mine water via an intermediate heat-exchanger is considered. Provides handling method as well as example of the intermediate heat-exchanger design. 1 illustration.

UDC 622.765.061

USE OF A 2-ETHYLHEXANOL PRODUCTION DERIVATIVE FOR COAL FLOTATION

[Synopsis of article by N.S. Vlasova, L.G. Savinchuk, V.B. Chizhevskiy, pp 39-40]

[Text] Results of physico-chemical and flotation research on the VKP reagent are considered. Provides recommendations. 2 tables, 2 illustrations, 2 references.

UDC 662.741.3.022.001.5.622.33

FEATURES OF COAL ENRICHMENT BY-PRODUCTS DEPENDING ON DEGREE OF COAL METAMORPHISM

[Synopsis of article by Yu. A. Chernyshov, S.G. Shvarts, S.N. Danilov, pp 40-41]

[Text] Results of research on the characteristics of coal enrichment by-products as related to the level of metamorphism of the coal. 1 table.

UDC 622.831.322

SOME MINING AND GEOLOGICAL CONDITIONS DERIVED FROM A DETAILED EXPLORATION OF THE OL'KHOVATKA SECTION

[Synopsis of article by G.M. Stovas, N.V. Sakhnevich, N.S. Polyakova, O.D. Stasenko, pp 41-42]

[Text] A method of plotting forecasting maps for threat of explosion that utilizes geological and prospecting data. 1 table, 2 illustrations, 1 reference.

UDC 622.83

SPECIAL FEATURES OF THE PROCESS OF FOLDING OF THE EARTH'S SURFACE IN WORKINGS IN THE TOREZ-SNEZHNYAN RAYON

[Synopsis of article by V.N. Yatsenko, pp 43-44]

[Text] Deformations of the earth's surface in the Donbass anthracite regions are considered as well as the relationship between curved and horizontal deformations. 3 tables, 1 illustration, 1 reference.

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USSR Report

ENERGY

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USSR REPORT

ENERGY

CONTENTS

FUELS

OIL, GAS PRODUCTION, DRILLING IN AZERBAIJAN IN 1983

VYSHKA Figures

Baku VYSHKA in Russian 8, 9 Sep; 6, 7 Oct; 10, 11 Nov; 9 Dec 83; 7, 8 Jan 84

[Charts of oil and gas production and drilling figures: "Oil and Gas: How Production (Drilling) Is Going"]

[8 Sep 84 p 1]

[Text] **Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Oil and Gas Production Plan, January-August 1983 (Percent of Plan)**

		August		January-August	
		Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association	(General Director Comrade R. Gadzhiyev)	100,1	105,3	100,2	111,2
Leninneft' NGDU*	(Comrade R. Vezirov, Chief, Comrade M. Mamedov, Party Committee Secretary)	95,4	100,6	97,0	101,4
Imeni 26 Baku Commissars NGDU	(Comrades A. Bagiyev, Ch. Mustafayev)	100,0	102,0	100,8	101,9
Ordzhonikidzeneft' NGDU	(Comrades Z. Tagiyev, R. Ragimov)	103,6	108,7	100,5	109,5
Karadagneft' NGDU	(Comrades K. Kerimov, M. Ragimov)	100,6	115,0	103,0	121,5
Kirovneft' NGDU	(Comrades T. Mamedov, I. Ibragimov)	100,3	102,6	100,3	105,3
Azizbekovneft' NGDU	(Comrades T. Gasanov, M. Alpatov)	102,2	102,1	100,6	108,1
Siazanneft' NGDU	(Comrades M. Musayev, A. Medzhidov)	88,2	100,0	96,4	102,0
Shirvanneft' NGDU	(Comrades V. Mamedov, Z. Geydarov)	100,5	100,3	100,9	110,3
Sal'yanyneft' NGDU	(Comrades F. Guseynov, G. Gasanov)	107,7	105,3	104,1	115,4
Neftechalaneft' NGDU	(Comrades S. Mamedov, I. Dzhafarov)	100,0	133,5	84,6	123,5
Muradkhanlyneft' NGDU	(Comrades S. Muradov, I. Babayev)	118,9	100,0	120,5	100,0
Kaspmorneftegazprom All-Union Prod. Assn.	(Comrade K. A. Abasov, Chief)	100,3	101,7	100,2	103,0
Imeni 22nd CPSU Congress Prod. Assn.	(Comrades S. Ibragimov, N. Zaidov)	104,3	100,0	101,4	100,0
Artemneftegaz NGDU	(Comrades B. Khalilov, T. Azizov)	100,0	114,0	100,0	111,0
Imeni Serebrovskiy NGDU	(Comrades F. Musayev, V. Alekperov)	100,0	100,7	100,6	108,2
Imeni N. Narimanov NGDU	(Comrades G. Gumbatov, Z. Mamedov)	101,0	100,3	101,8	104,1
Imeni 50-Letiye SSSR NGDU	(Comrades B. Mamedov, A. Ponyayev)	81,4	103,9	90,3	95,2
Total for All Associations		100,3	101,9	100,3	103,4

* NGDU [Oil and Gas Production Administration]

--January-August 1983 totals for Azneft' Association show that Leninneft', Neftechalaneft', and Siazanneft' NGDUs did not fulfill oil production plans, falling short of the plan by 33,800 tons. Figures for 8 months of the current year show that NGDU imeni 50-letiye SSSR fell short of the plan by 57,000 tons of oil and 140.3 million cubic meters of gas.

--Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets, being short by 324,100 tons.

[9 Sep 84 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Drilling Plans, January-August 1983 (Percent of Plan)

		August		January-August	
		Total Drilling	Exploratory Drilling	Total Drilling	Exploratory Drilling
Azneft' Association	(Comrade B. Gadzhiyev, General Director)	106,7	89,2	98,1	91,2
Apsheronskoye UBR*	(Comrades G. Gasanov, M. Mamedov)	100,3	88,9	100,2	67,3
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	124,6	100,7	92,2	57,9
Ali-Bayramlinskoye UBR	(Comrades G. Alekperov, N. Ismaylov)	100,2	95,6	94,0	93,1
Neftechalinskoye UBR	(Comrades D. Akhundov, L. Guseynov)	108,3	112,5	101,3	111,4
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	103,3	102,3	93,8	138,5
Gobustanskoye URB**	(Comrades A. Abdullayev, G. Israfilov)	109,4	109,4	104,4	104,4
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	102,1	44,1	96,1	63,9
Kaspmorneftegazprom All-Union Prod. Assn.	(Comrade K. A. Abasov, Chief)	82,3	62,7	89,5	78,1
Neftyanyye Kamni MUBR***	(Comrades O. Abasov, K. Dadashev)	100,1	—	111,3	—
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	100,4	—	105,3	—
Sangachal'skoye MUBR	(Comrades D. Bayramov, S. Aleskerov)	100,2	—	85,4	—
Primorskoye MURB****	(Comrades A. Ismailov, E. Imanov)	51,3	65,9	93,7	102,9
Bulla MURB	(Comrades M. Mamedov, M. Mamedov)	78,0	78,0	90,0	90,0
Bukhta Il'icha MURB	(Comrades A. Gasymov, O. Suleymanov)	105,5	76,4	100,0	72,0
STS [Stationary Equipment] MURB	(Comrades V. Aliyev, A. Muradverdiyev)	50,5	50,5	46,9	46,9
Total for All Associations		96,1	73,7	94,2	84,5

* UBR [Drilling Operations Administration]

** URB [Explanatory Drilling Administration]

*** MUBR [Offshore Drilling Operations Administration]

**** MURB [Offshore Exploratory Drilling Administration]

--January-August 1983 figures show that Azneft' Association was 5,700 meters short of the drilling plan. Siazanskoye, Ali-Bayramlinskoye, Kyursanginskoye, and Dzharlinskoye drilling administrations failed to complete the plan, falling short by 9,100 meters. The association also failed to complete the plan for exploratory drilling (6,800 meters short). The Siazanskoye, Dzharlinskoye, Apsheronskoye, and Ali-Bayramlinskoye drilling administrations fell short by 11,500 meters.

--Kaspmorneftegazprom All-Union Production Association fell short of the drilling plan by 24,300 meters. Sangachal'skoye, Bulla, Primorskoye, and STS drilling administrations failed to complete plans, falling short by 23,600 meters. The association also failed to fulfill the plan for exploratory drilling (18,200 meters short). Bulla, STS, and Bukhta Il'icha MURBs fell short by 17,200 meters.

[6 Oct 83 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Oil and Gas Production Plan, January-September 1983 (Percent of Plan)

		September		January-September	
		Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association		100,3	106,1	100,2	110,6
Leninneft' NGDU	(Comrades R. Vezirov, M. Mamedov)	93,9	100,3	96,7	101,3
Imeni 26 Baku Commissars NGDU	(Comrades A. Bagiyev, Ch. Mustafayev)	101,6	101,9	100,9	101,9
Ordzhonikidzeneft' NGDU	(Comrades Z. Tagiyev, A. Ragimov)	101,9	109,1	100,6	109,5
Karadagneft' NGDU	(Comrades K. Kerimov, M. Ragimov)	101,8	116,7	102,9	120,9
Kirovneft' NGDU	(Comrades T. Mamedov, I. Ibragimov)	101,7	104,6	100,4	105,3
Azizbekovneft' NGDU	(Comrades T. Gasanov, M. Alpatov)	102,3	105,5	100,7	107,8
Siazanneft' NGDU	(Comrades M. Musayev, A. Medzhidov)	78,3	100,3	94,4	101,8
Shirvanneft' NGDU	(Comrades V. Mamedov, Z. Geydarov)	100,1	100,8	100,8	109,3
Sal'yanyneft' NGDU	(Comrades F. Guseynov, G. Gasanov)	106,6	104,9	104,3	114,2
Neftechalaneft' NGDU	(Comrades S. Mamedov, I. Dzhafarov)	100,0	144,0	86,3	125,4
Muradkhanlyneft' NGDU	(Comrades S. Muradov, I. Babayev)	178,4	100,0	125,9	100,0
Kaspmorneftegazprom All-Union Prod. Assn.		100,8	101,3	100,2	102,8
Imeni 22nd CPSU Congress Prod. Assn.	(Comrades S. Ibragimov, N. Zaidov)	105,1	100,0	101,8	100,0
Artemneftegaz NGDU	(Comrades B. Khalilov, T. Azizov)	100,0	114,0	100,0	111,3
Imeni Serebrovskiy NGDU	(Comrades F. Musayev, V. Alekperov)	96,9	100,0	100,2	107,3
Imeni N. Narimanov NGDU	(Comrades G. Gumbatov, Z. Mamedov)	100,0	100,9	101,6	103,8
Bulla-more imeni 50-letiya SSSR NGDU	(Comrades B. Mamedov, A. Ponyayev)	87,1	102,9	89,9	96,0
Total for All Associations		100,5	101,6	100,2	103,3

--January-September 1983 figures show that Leninneft', Siazanneft', and Neftechalaneft' NGDUs did not fulfill all production plans, falling short by 42,300 tons. Totals for 9 months of the current year show that NGDU imeni 50-letiya SSSR fell short of the plan by 67,000 tons of oil and 130.2 million cubic meters of gas.

--Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets, falling short by 359.6 thousand tons.

[7 Oct 83 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Drilling Plan, January-September 1983 (Percent of Plan)

		September		January September	
		Total Drilling	Exploratory Drilling	Total	Exploratory Drilling
Azneft' Association	(Comrade B. Gadzhiyev, General Director)	96.0	74,7	97,8	89,2
Apsheronskoye UBR	(Comrades G. Gasanov, M. Mamedov)	100,2	41,7	100,2	64,0
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	101,2	51,8	93,2	57,1
Ali-Bayramlinskoye	(Comrades G. Alekperov, N. Ismayloy)	69,6	116,8	91,1	96 1
Neftechalinskoye UBR	(Comrades D. Akhundov, L. Guseynov)	118,8	79,6	103,1	108,5
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	103,0	100,2	94,9	134,3
Gobustanskoye URB	(Comrades A. Abdullayev, G. Israfilov)	102,8	102,8	104,2	104,2
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	100,6	21,7	96,7	58,2
Kaspmorneftegazprom All-Union Prod. Assn.	(Comrade K. A. Abasov, Chief)	71,1	49,0	87,3	75,6
Neftyanyye Kamni MUBR	(Comrades O. Abasov, K. Dadashev)	100,2	—	110,1	—
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	71,4	—	101,6	—
Sangachal'skoye MUBR	(Comrades D. Bayramov, S. Aleskerov)	78,4	—	84,5	—
Primorskoye MURB	(Comrades A. Ismailov, E. Imanov)	100,2	90,8	94,4	101,4
Bulla MURB	(Comrades M. Mamedov, M. Mamedov)	32,8	32 8	83,3	83,3
Bukhta Il'icha MURB	(Comrades A. Gasymov, O. Suleymanov)	100,7	65,7	100,1	71,1
STS MURB	(Comrades V. Aliyev, A. Muradverdiyev)	20,0	20,0	43,7	43,7
Total for All Associations		84,9	61,3	93,2	81,6

--January-September 1983 figures show that Azneft' Association fell short of the drilling plan by 7,200 meters. Ali-Bayramlinskoye, Kyursanginskoye, Siazanskoye, and Dzharlinskoye drilling administrations fell short of planned completion by 11,200 meters. The association also failed to fulfill the exploratory drilling plan (by 9,600 meters). The Apsheronskoye, Ali-Bayramlinskoye, Siazanskoye, and Dzharlinskoye drilling administrations were short by 14,200 meters.

--Kaspmorneftegazprom All-Union Production Association fell short of the drilling plan by 33,100 meters. Sangachal'skoye, Bulla, Primorskoye, and STS drilling administrations fell short of plans by 29,500 meters. The association also failed to fulfill the exploratory drilling plan (by 24,200 meters). Bulla, STS, and Bukhta Il'icha MURBs fell 22,000 meters short of plan fulfillment.

[10 Nov 83 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Oil and Gas Production Plan, January-October 1983 (Percent of Plan)

		October		January-October	
		Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association		100,6	107,7	100,2	110,3
Leninneft' NGDU	(Comrades R. Vezirov, M. Mamedov)	100,0	100,3	97,0	101,2
Imeni 26 Baku Commissars NGDU	(Comrades A. Bagiyev, Ch. Mustafayev)	100,0	102,7	100,8	102,0
Ordzhonikidzeneft' NGDU	(Comrades Z. Tagiyev, R. Ragimov)	100,0	108,9	100,6	109,4
Karadagneft' NGDU	(Comrades K. Kerimov, E. Abbasov)	102,2	106,0	102,8	119,3
Kirovneft' NGDU	(Comrades T. Mamedov, I. Ibragimov)	100,0	111,0	100,4	105,8
Azizbekovneft' NGDU	(Comrades T. Gasanov, A. Bakhbanly)	100,0	103,4	100,7	107,4
Siazanneft' NGDU	(Comrades M. Musayev, A. Medzhidov)	100,0	120,0	94,9	103,5
Shirvanneft' NGDU	(Comrades V. Mamedov, Z. Geydarov)	100,4	100,6	100,8	108,4
Neftyanyneft' NGDU	(Comrades F. Guseynov, G. Gasanov)	102,2	103,3	104,1	113,1
Neftechalaneft' NGDU	(Comrades S. Mamedov, I. Dzhafarov)	100,0	179,4	87,5	129,7
Muradkhanlyneft' NGDU	(Comrades S. Muradov, I. Babayev)	104,0	100,0	122,6	100,0
Kaspmorneftegazprom All-Union Prod. Assn.		100,4	100,1	100,3	102,6
Imeni 22nd CPSU Congress Prod. Assn.	(Comrades S. Ibragimov, N. Zaidov)	100,0	100,0	101,6	100,0
Artemneftegaz NGDU	(Comrades B. Khalilov, T. Azizov)	100,0	123,0	100,0	112,4
Imeni Serebrovskiy NGDU	(Comrades F. Musayev, V. Alekperov)	100,0	108,3	100,2	107,4
Imeni N. Narimanov NGDU	(Comrades G. Gumbatov, Z. Mamedov)	100,0	104,9	101,5	103,9
Bulla-more NGDU imeni 50-letiye SSSR	(Comrades B. Mamedov, B. Mirzabekov)	100,0	87,6	90,8	95,1
Total for All Associations		100,3	100,5	100,2	102,9

--January-October 1983 figures for Azneft' Association show that Lenimneft', Siazanneft', and Neftechalaneft' NGDUs failed to fulfill all production plans, falling short by 42,300 tons.

Totals for 10 months of the current year show that Bulla-more NGDU imeni 50-letiye SSSR fell short of the plan by 67,000 tons of oil and 183.9 million cubic meters of gas.

Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets, falling short by 398,600 tons.

[11 Nov 83 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Drilling Plans by Azneft' Association and Kaspmorneftegazprom All-Union Production Association, January-October 1983 (Percent of Plan)

		October		January-October	
		Total Drilling	Exploratory Drilling	Total Drilling	Exploratory Drilling
Azneft' Association		79,7	66,5	96,0	86,8
Apsheronskoye UBR	(Comrades G. Gasanov, M. Mamedov)	46,0	—	94,6	56,6
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	55,3	29,2	89,3	54,2
Ali-Bayramlinskoye UBR	(Comrades G. Alekperov, N. Ismaylov)	79,0	81,3	90,1	94,7
Neftechalinskoye UBR	(Comrades D. Akhundov, L. Guseynov)	106,2	101,0	103,4	107,6
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	93,2	78,2	94,7	127,6
Gobustanskoye URB	(Comrades A. Abdullayev, V. Mamedov)	103,4	103,4	104,1	104,1
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	100,3	32,0	97,0	55,1
Kaspmorneftegazprom All-Union Production Association		72,1	34,2	85,7	69,9
Neftyanyye Kamni MUBR	(Comrades O. Abasov, K. Dadashev)	100,1	2,3 раза	109,0	11,4 раза
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	104,1	—	101,8	—
Sangachal'skoye MUBR	(Comrades D. Bayramov, B. Gadzhiyev)	100,1	—	86,0	—
Primorskoye MURB	(Comrades A. Ismailov, E. Imanov)	52,0	51,5	89,7	95,8
Bulla MURB	(Comrades M. Mamedov, A. Ponyayev)	42,9	42,9	78,6	78,6
Bukhta Il'icha MURB	(Comrades A. Gasymov, I. Guseynov)	32,4	4,0	93,7	63,3
STS MURB	(Comrades V. Aliyev, A. Muradverdiyev)	6,2	6,2	39,4	39,4
Total for All Associations		76,3	40,2	91,4	78,0

--January-October 1983 totals show that Azneft' Association failed to fulfill the drilling plan by 14,600 meters. Apsheronskoye, Ali-Bayramlinskoye, Kyursanginskoye, Siazanskoye, and Dzharlinskoye drilling administrations fell short of the plan by 18,600 meters. The association also failed to fulfill the exploratory drilling plan (by 13,200 meters). Apsheronskoye, Ali-Bayramlinskoye, Siazanskoye, and Dzharlinskoye drilling administrations fell short by 18,600 meters.

Kaspmorneftegazprom All-Union Production Association fell short of the drilling plan by 41,500 meters. Sangachal'skoye, Bulla, Primorskoye, Bukhta Il'ich, and STS drilling administrations fell short of plans by 37,100 meters. The association failed to fulfill the exploratory drilling plan (by 32,300 meters), and Bulla, Primorskoye, STS, and Bukhta-Ilicha MURBs fell short of drilling plans by 29,700 meters.

[9 Dec 83 p 3]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of Drilling Plans by Azneft' Association and Kaspmorneftegazprom All-Union Production Association, January-November 1983 (Percent of Plan)

		November		January-November	
		Total Drilling	Exploratory Drilling	Total Drilling	Exploratory Drilling
Azneft' Association		79,8	75,7	94,5	85,7
Apsheronskoye UBR	(Comrades G. Gasanov, M. Mamedov)	58,4	28,4	90,7	53,8
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	69,9	27,8	87,5	51,6
Ali-Bayramlinskoye UBR	(Comrades G. Alekperov, N. Ismaylov)	46,3	21,6	86,6	87,2
Neftechalinskoye UBR	(Comrades D. Akhundov, L. Guseynov)	94,8	41,9	102,5	102,1
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	100,0	112,1	95,2	125,8
Gobustanskoye URB	(Comrades A. Abdullayev, V. Mamedov)	104,0	104,0	104,1	104,1
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	136,4	118,4	100,0	60,3
Kaspmorneftegazprom All-Union Production Association		63,7	40,3	83,7	66,9
Neftyanyye Kamni MUBR	(Comrades O. Abasov, K. Dadashev)	47,3	12,4	102,5	в 3,9 р.
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	100,3	—	101,7	—
Sangachal'skoye MUBR	(Comrades D. Bayramov, B. Gadzhiyev)	61,7	—	83,8	—
Primorskoye MURB	(Comrades A. Ismailov, E. Imanov)	24,8	27,1	83,2	88,8
Bulla MURB	(Comrades M. Mamedov, A. Ponyayev)	79,5	79,5	78,7	78,7
Bukhta Il'icha MURB	(Comrades A. Gasymov, I. Guseynov)	101,5	28,7	94,3	60,2
STS MURB	(Comrades V. Aliyev, A. Muradverdiyev)	—	—	35,3	35,3
Total for All Associations		73,6	56,6	89,7	73,9

--January-November 1983 totals show that Azneft' Association fell short of drilling plans by 22,100 meters. Apsheronskoye, Ali-Bayramlinskoye, Kyursanginskoye, and Siazanskoye drilling administrations fell behind plans by 25,200 meters. The association also failed to fulfill the exploratory drilling plan by 15,700 meters. Apsheronskoye, Ali-Bayramlinskoye, Siazanskoye, and Dzharlinskoye drilling administrations were 19,800 meters short of the plan.

Kaspmorneftegazprom All-Union Production Association fell short of the drilling plan by 52,400 meters. Sangachal'skoye, Bulla, Primorskoye, Bukhta Il'icha, and STS drilling associations failed to fulfill drilling plans by 44,400 meters. The association also failed to fulfill the exploratory drilling plan by 39,500 meters. Bulla, Primorskoye, STS, and Bukhta Il'icha MURBs fell 36,400 meters short of drilling plans.

[7 Jan 84 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillmert of Oil and Gas Production Plan, 1983 (Percent of Plan)

		December		January-December	
		Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association		100,0	104,4	100,2	109,6
Leninneft' NGDU	(Comrades R. Vezirov, E. Makhmudov)	92,7	100,6	96,9	101,1
Imeni 26 Baku Commissars NGDU	(Comrades A. Bagiyev, Ch. Mustafayev)	100,0	103,9	100,6	102,3
Ordzhonikidzeneft' NGDU	(Comrades Z. Tagiyev, R. Ragimov)	100,0	108,8	100,5	109,4
Karadagneft' NGDU	(Comrades K. Kerimov, E. Abbasov)	102,0	101,5	102,6	116,6
Kirovneft' NGDU	(Comrades T. Mamedov, I. Ibragimov)	100,0	106,3	100,3	106,1
Azizbekovneft' NGDU	(Comrades T. Gasanov, A. Bakhbanly)	100,0	112,6	100,6	109,0
Siazanneft' NGDU	(Comrades M. Musayev, A. Medzhikov)	100,0	101,3	95,7	104,1
Shirvanneft' NGDU	(Comrades V. Mamedov, Z. Geydarov)	103,0	102,1	100,9	107,1
Sal'yanyneft' NGDU	(Comrades F. Guseynov, G. Gasanov)	110,9	105,9	104,4	112,0
Neftechalaneft' NGDU	(Comrades S. Mamedov, I. Dzhafarov)	86,6	123,5	88,4	132,7
Muradkhanlyneft' NGDU	(Comrades S. Muradov, I. Babayev)	100,0	100,0	118,7	100,0
Kaspmorneftegazprom All-Union Production Associations		100,7	100,1	100,3	102,1
Imeni 22nd CPSU Congress Prod. Assn.	(Comrades S. Ibragimov, N. Zaidov)	101,6	100,0	101,4	100,0
Artemneftegaz NGDU	(Comrades B. Khalilov, T. Azizov)	100,0	109,3	100,0	112,1
Imeni Serebrovskiy NGDU	(Comrades F. Musayev, V. Alekperov)	97,9	110,9	100,0	107,7
Imeni N. Narimanov NGDU	(Comrades G. Gumbatov, Z. Mamedov)	100,0	103,5	101,2	103,8
Bulla-more NGDU imeni 50-letiye SSSR	(Comrades B. Mamedov, B. Mirzabekov)	100,0	85,2	92,2	93,6
Total for All Associations		100,5	100,3	100,3	103,5

--Totals for 1983 show that Azneft' Association's Leninneft', Siazanneft', and Neftechalaneft' NGDUs failed to fulfill oil production plans by 48,700 tons.

Totals for 1983 show that NGDU imeni 50-letiye SSSR failed to fulfill oil production plans by 67,000 tons and gas production plans by 294.2 million cubic meters.

Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets in 1983.

[8 Jan 84 p 1]

[Text] Azerbaijan SSR Central Statistical Administration Figures on Fulfillment of 1983 Drilling Plans (Percent of Plan)

		December		January-December	
		Total Drilling	Exploratory Drilling	Total Drilling	Exploratory Drilling
Azneft' Association		61,1	50,5	91,6	82,7
Apsheronskoye UBR	(Comrades A. Khasmamedov, M. Mamedov)	10,8	6,8	83,9	47,3
Siazanskoye UBR	(Comrades I. Kagramanov, I. Guvvetov)	46,8	6,4	84,1	47,6
Ali-Bayramlinskoye UBR	(Comrades G. Alekperov, N. Ismaylov)	51,3	12,2	83,7	81,5
Neftechalinskoye UBR	(Comrades D. Akhundov, I. Guseynov)	100,3	85,5	102,2	101,1
Kyursanginskoye UBR	(Comrades A. Bakhshiyev, Sh. Abilov)	64,4	82,1	92,5	121,8
Gobustanskoye URB	(Comrades A. Abdullayev, V. Mamedov)	81,2	81,2	102,2	102,2
Dzharlinskoye URB	(Comrades R. Veliyev, M. Dzhafarov)	65,2	52,6	96,6	59,6
Kaspmorneftegazprom All-Union Production Association					
Neftyanyye Kamni MUBR	(Comrades O. Abasov, K. Dadashev)	101,0	118,1	102,4	+ 2,8 p.
Peschaninskoye MUBR	(Comrades Sh. Mekhtiyev, B. Mamedov)	82,2	—	100,2	—
Sangachal'skoye MUBR	(Comrades O. Bayramov, B. Gadzhiyev)	50,7	—	81,0	—
Primorskoye MURB	(Comrades A. Ismailov, I. Imanov)	39,3	23,1	79,1	82,5
Bulla MURB	(Comrades M. Mamedov, A. Ponyayev)	37,5	37,5	74,8	74,8
Bukhta Il'icha MURB	(Comrades A. Gasymov, I. Guseynov)	70,8	5,5	92,1	55,0
STS MURB	(Comrades V. Aliyev, A. Muradverdiyev)	5,0	5,0	32,4	32,4
Total for All Associations		59,2	38,6	87,0	73,6

--Totals for 1983 show that Azneft' Association fell 37,200 meters short of the drilling plan. Apsheronskoye, Ali-Bayramlinskoye, Kyursanginskoy, Siazanskoye, and Dzharlinskoye drilling administrations failed to complete the plan, falling 40,500 meters short. The association also failed to fulfill the exploratory drilling plan (by 20,700 meters). Apsheronskoye, Ali-Bayramlinskoye, Siazanskoye, and Dzharlinskoye drilling administrations fell 23,900 meters short.

Kaspmorneftegazprom All-Union Production Association fell 65,800 meters short of the drilling plan in 1983. Sangachal'skoye, Bulla, Primorskoye, Bukhta Il'ich and STS drilling administrations fell 57,600 meters short of plans. The association also failed to fulfill the exploratory drilling plan (by 48,500 meters). Bulla, Primorskoye, STS, and Bukhta Il'icha MURBs fell 45,200 meters short of drilling plan fulfillment.

January-November Figures

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[Chart of oil and gas production figures: "On the Oil Front"]

[Text] Azerbaijan SSR Central Statistical Administration on Fulfillment of Oil and Gas Production Plan, January-November 1983 (Percent of Plan)

	November		January-November	
	Oil Production	Gas Production	Oil Production	Gas Production
Azneft' Association	100,6	107,6	100,3	110,1
Leninneft' NGDU (Comrades R. Vezirov, M. Mamedov)	100,0	100,5	97,3	101,9
Imeni 26 Baku Commissars NGDU (Comrades A. Bagiyev, Ch. Mustafayev)	100,0	104,2	100,7	102,2
Ordzhonikidzeneft' NGDU (Comrades Z. Tagiyev, R. Ragimov)	100,0	109,2	100,5	109,4
Karadagneft' NGDU (Comrades K. Kerimov, E. Abbasov)	100,9	104,8	102,6	118,0
Kirovneft' NGDU (Comrades T. Mamedov, I. Ibragimov)	100,0	108,6	100,3	106,1
Azizbekovneft' NGDU (Comrades T. Gasanov, A. Bakhbanly)	100,0	110,0	100,6	107,6
Siazanneft' NGDU (Comrades M. Musayev, A. Medzhidov)	100,0	112,8	95,3	104,3
Shirvanneft' NGDU (Comrades V. Mamedov, Z. Geydarov)	100,1	100,2	100,7	107,6
Sal'yanyneft' NGDU (Comrades F. Guseynov, G. Gasanov)	100,8	106,6	103,8	112,5
Neftechalaneft' NGDU (Comrades S. Mamedov, I. Dzhafarov)	100,0	187,1	88,5	133,8
Muradkhanlyneft' NGDU (Comrades S. Muradov, I. Babayev)	112,5	100,0	121,2	100,0
Kaspmorneftegazprom All-Union Production Association	100,4	100,1	100,3	102,3
Imeni 22nd CPSU Congress Prod. Assn. (S. Ibragimov, N. Zaidov)	100,0	100,0	101,4	100,0
Artemneftegaz NGDU (Comrades B. Khalilov, T. Azizov)	100,0	111,7	100,0	112,3
Imeni Serebrovskiy NGDU (Comrades F. Musayev, V. Alekperov)	100,0	107,8	100,2	107,4
Imeni N. Narimanov NGDU (Comrades G. Gumbatov, Z. Mamedov)	100,0	103,1	101,3	103,8
Bulla-more NGDU imeni 50-letiye SSSR (Comrades B. Mamedov, B. Mirzabekov)	100,0	88,9	91,6	94,4
Total for All Associations	100.5	100.5	100.2	102.9

January-November 1983 totals for Azneft' Association show that Leninneft', Siazanneft', and Neftechalaneft' NGDUs failed to fulfill oil production plans by 42,300 tons.

Figures for the first 11 months of the current year show that Bulla-more NGDU imeni 50-letiye SSSR fell short of the plan by 67,000 tons of oil and 230.2 million cubic meters of gas. Kaspmorneftegazprom All-Union Production Association failed to meet additional oil production targets by 436,900 tons.

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DEVELOPMENT PROBLEMS AT EKIBASTUZ DESCRIBED

Moscow UGOL' in Russian No 12, Dec 83 pp 3-11

[Article by M. I. Shchadov, first deputy minister, USSR Coal Industry: "Urgent Problems in the Development of ETEK"]

[Text] ETEK [The Ekibastuz Fuel and Energy Complex] has, with regard to the scale of its development and the uniqueness of its natural conditions, a special place among the most important elements of the country's fuel and energy base. In addition to the Bogatyr', Severnyy, Vostochnyy and Maykyubenskiy pits, the complex based on the Ekibastuz and Maykyubenskiy coal basins will include large thermal electric power stations with a total capacity of 20 million kW, both AC and DC transmission lines totaling more than 7,700 km, new railroad lines stretching 1,090 km, construction industry enterprises, housing, municipal, cultural and service facilities.

The entire country is building the fuel and power giant in northern Kazakhstan, as a whole series of ministries and departments are participating in the creation of ETEK. The Central Committee of the VLKSM [All Union Lenin Young Communist League] has made ETEK's construction an All Union Komsomol shock project. Republic and local party, soviet and economic organs are giving thorough assistance to all enterprises and organizations in completing the tasks entrusted to them.

The pits of the Ekibastuzugol' [Ekibastuz Coal] Association, the largest in the sector, are the basis for the complex. The Ekibastuz coal basin, occupying a comparatively small area, gives the country one out of every four tons of coal extracted by surface methods. However, in spite of the rather favorable geometric parameters of bedding, the complex geological structure and the physical-mechanical properties of the three main contiguous seams create great difficulties for their mining by powerful bucket wheel excavators.

Mining Geological Conditions and Quality of Coal in the Ekibastuz Basin.

The basin's coal seams and enclosing rock are in the form of a trough shaped asymmetric plunging fold with maximum axial dimensions of 24 and 8.5 km. Commercial reserves are at depths of up to 760 m. The horizontal width of some sections close to the surface reaches 600 m, while the bedding angle ranges from 0° to 90° (Table 1.).

Table 1., Distribution of Reserves (in percent) by Bedding Angle (°)

Seam	Bedding Depth (m)	0 - 25°	25 - 45°	45 - 90°
I	To 200	62	11	27
II	200 - 400	86	9	5
III	400 - 690	100	--	--

The coal seams (especially Seam III) consist of frequently interbedded bands of coal and rock (mainly weakly carbonaceous and carbonaceous argillite) of differing thickness and hardness. The coefficient of coal and carbonaceous rock hardness is f = 1.5/3.3 (on Prof. M. M. Protod'yakonov's scale), of rock interbeds -- f = 2/11 while for overburden rock -- f = 4.1/5.6. The thickness distribution of rock interbeds is given in Table 2.

Table 2. Rock Interbeds as a Percentage of Thickness (m)

Seam	<0.5	0.5 - 1	1 - 1.5	1.5 - 3	3 - 6	>6
I	8	2.4	0.6	1	1.3	0.5
II	4.8	1.8	1.2	1.9	0.8	0.1
III	6.1	2.3	2.2	5.4	8.3	20.1

Also, in the coal series there are frequently geological dislocations with a finely jointed structure, hard (f = 5) interbeds, jointed low ash strata with rock interbeds, very hard lenticular inclusions, etc.

The basin's coal has high ash content, characterized by wide ranging variation. (See Table 3.).

Table 3. Percentage Distribution of Coal Ash Content

Seam	<15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
I	1	6	12	26	32	11	8	4
II	2	11	23	30	17	9	7	1
III	3	3	12	18	15	22	14	13

The use of Ekibastuz coal for power generation purposes predetermines the commercial characteristics of its quality, the level of which depends upon the relationship of outlays for its extraction and the production of electrical energy. The lower the prime cost of coal extraction, including transportation to electric power stations, then the lower will be the demands which can be made upon its combustion qualities.

However, the technical potentials of boiler units are restricted. There is a limit beyond which even short term deterioration in coal quality leads either to a sharp increase in mazut consumption or to a complete halt in burning. Not only average ash content, but also its allowable range are important here. Studies show that if this range contracts by 2 fold, then fuel consumption for the generation of electrical energy declines by 10 percent.

In addition to meeting requirements for coal quality the pits at ETEK also face a steady increase in extraction volumes, up to 105 - 115 million tons in 1990. Thus, there is a multifactor interaction, not subject to a single valued statistical solution, between the amount of coal extracted, its qualities and mining operation parameters.

The wide range of coal quality changes within excavator passes along and across the seams inevitably leads to the necessity of its blending. This is possible at all stages, beginning with extraction and ending with the delivery of pulverized coal to station furnaces. This problem should be first of all solved at the pit. Parameters for mining operations and the mechanization structure influence the indicator of coal ash content blending. Fluctuations in the "route" ["marshrutnoy"] ash content (i.e. the volume of units delivered to the route) are substantially lowered when there is an increase in the number of working excavators. For example, when there was an increase, from 1 to 4, in the number of excavators working seam III at the Bogatyr' pit, relative ash content declines by 25 percent. However, this makes it necessary to reduce unit capacity, and consequently the linear parameters of excavators, leading to deterioration in mining operation conditions, to complications in transportation layouts and the coal quality control process. The coefficient of blending in the route, calculated as the ratio of standard deviations of quality before and after blending can, according to forecast data, reach the value 2. According to data from UkrNIIproyekt [Possibly: Ukrainian Scientific Research and Design Institute], the use of blender loading complexes (BLC) can increase this indicator to 10. Such complexes can perform a number of other functions: buffer storage when there are irregularities in the delivery of freight cars by the MPS [Ministry of Railways], and as points for the mechanized and automated commercial testing and batch loading of coal in freight cars. A BLC makes possible considerable increases in coal extraction volume by raising excavator productivity through reductions in idle time waiting for empty freight cars, improvements in the use of mine rolling stock, reductions in customers' unit fuel consumption and the elimination of freight car reloading.

The creation and use of special boiler units for high ash coals is a prerequisite for the transition to the bulk extraction of coal. This will increase pit capacity through the mining of coal with ash content up to 60 percent. It will also make it possible to give preference to mining engineering factors in the selection of excavator and transportation equipment.

Extraction Operations

Given the existing technology, the domestic and foreign bucket wheel excavators which had been in Ekibastuz pits up until 1965 could not effectively work the hard rock interbeds. Therefore during 1955-1965 coal was extracted only by single bucket excavators. Their operation revealed the imperfections in the coal extraction process using mechanical shovels: their small parameters and technical productivity hindered further increases in coal extraction; the large numbers in operation (up to 45) led to complicated production organization and deteriorated techno-economic indicators primarily because of the elaborate transportation layout and low labor productivity; it did not provide for the selective working of seams, leading to large losses and deliveries of coal in unstandard sizes.

All this made it necessary to replace excavator equipment and improve the coal extraction process. New technology for the effective extraction of hard coal from seams with complex structures was developed and introduced, the design of existing bucket wheel excavators improved and new types created. A feature of the new process is the preliminary fragmentation of the coal by blasting "to shake it up" (retaining its structure), ensuring the effective and stable operation of powerful bucket wheel excavators during the selective extraction of hard coal bands and rock interbeds with coal of the required ash content. The coal is fragmented by drilled charges (hole diameters: 160 and 214 mm). The relative resistance of the coal to bucket excavation is reduced to a level making possible the normal operation of bucket wheel excavators with increased unit digging force while the retention of the seams' structural characteristics permits the effective use of the excavators.

Rational parameters for blasting preparations have been developed by the joint efforts of associates at sector institutes and workers at the Ekibastuzugol' Association and pits. Taking into consideration all the diverse conditions of seam bedding, four types of coal massifs have been distinguished. These differ in hardness, jointing, the cohesion of rock in the massif and the resistance of coal to cutting. The rational unit consumption of explosives has been determined for each type. Differential fragmentation is used for benches of differing height. The charges are concentrated near the stronger interbeds. Descriptions have been developed for blasting preparation, depending upon the type of excavator and face parameters and structure.

However, there is still much remaining to be done to improve drilling and blasting operations, both with regard to equipment and techniques and its organization and coordination with other elements. It is essential to modernize the drill unit fleet through the introduction of SBR-160A and 2SBSh-200MN type machines; the BTS-150 unit with diesel drive should be used for drilling to eliminate hanging sections of banks and ledges. There should also be improvements in the utilization factor and patterns of unit loading, as well as in the drilling equipment service and repair system.

Blasting with small charges increases the number of shots, complicating the process and preventing the effective use of charge loading machines. Coal massif blasting preparation improvements should be directed towards the mechanization of charge loading and drilling bottom holes, increasing the use of massive charges, and the coordination of drilling and blasting work parameters with rational conditions for excavation and with the presence of hard inclusions in the coal massif.

Blast preparation is also made difficult by the intended use of conveyors on the Vostochnyy Pit. This includes a number of face and combined conveyors, located in direct proximity to the blocks being blasted. It is essential to minimize the scattering of rock and to protect conveyors from falling rock and seismic effects during blasting, while still sufficiently fragmenting the blocks.

The following rational flowsheets for working the faces have been developed in order to effectively utilize bucket wheel excavators under different structural-strength indicators and geological parameters: at bedding angles of 0°-40° -- working at the normal width with one pass of the excavator; at bedding angles of 40°-80° -- working in one pass using controlled caving and working with two passes of the excavator.

A flowsheet for working the faces at normal width with one pass of the excavator and with the separate excavation of coal bands and rock interbeds is used at the Bogatyr' and Severnyy pits when there are bedding angles of 8°-20° and 12°-40° respectively.

The flowsheet with controlled caving was introduced for the working of steeply dipping seams, where the coal and rock is not moved great distances and where there is separate excavation. Faces are worked in two passes under other conditions and in sections with low resistance to digging.

The most rational directions in coal extraction operations have been selected in order to ensure the effective working of faces and the intramine blending of commercial coal quality. In the northeast part of the basin the coal seams are worked on the hanging wall side to a depth of 200 m, and in the south part on the footwall side. This is the first time this has been done in the selective development of a deposit with a complex structure. At the Bogatyr' pit alone, this way of working the field has reduced the annual volume of stripping work by 25 percent, the total distance of the work front by 1.2 fold and has made it unnecessary to move railroad tracks. This has been beneficial to track condition and had made it possible to increase train speed by 15 percent.

In order to work hard coals and rock interbeds, bucket wheel excavators have been redesigned and new types created, the designs of which include a number of new basic features. In designing these machines it was necessary to develop gravity operated working tools for extracting hard coals; provide for increased rigidity, high reliability and longevity of basic components under severe climatic conditions and create high speed working tools with direct centrifugal unloading. The new bucket wheel excavators should have reduced linear parameters, high productivity and increased digging force.

Experimental research has shown that coal can be extracted in the Ekibastuz basin by a bucket wheel excavator with a unit force of digging in the 100-180 N/cm^2 range. Domestic bucket wheel excavators capable of these and greater digging forces are being produced in accordance with the specifications for types and sizes of continuous mining equipment developed by UkrNIIproyekt. The following are now being series produced: ER-1250-16/1.5D (ERC-400D) standardized excavators, which are now the basic extraction machines at USSR Minugleprom surface mines, the ERP-1250-16/1, intended for work in difficult conditions in the basin, and ERShRD-5000 bucket wheel complexes. A new type of working tool has been created -- a wheel with centrifugal unloading. It makes it possible to sharply reduce the metal intensiveness of bucket wheel excavators with increased unit digging force and improved dynamic parameters for digging. The production of future excavators using this type of working tool is being mastered.

The creation of hydraulic drives for excavators' basic working mechanisms is a very important direction in the further improvement of bucket wheel excavator dynamic characteristics when working hard rock, improving their productivity and reliability, reducing excavation energy intensiveness and considerably reducing the amount of drilling and blasting work. The activization of research and development work in this area is a very urgent task.

Bucket wheel excavators now account for about 86 percent of all coal extracted from the association's pits. The extensive use of powerful, highly productive machines has made the problem of the batch loading of MPS gondolas especially acute. Unfortunately, a technically and commercially feasible way of weighing rock mass in the working face has not yet been found. The present conveyor scales do meet the requirements for commercial accuracy and are insufficiently reliable.

The development of instruments for measuring the ash content of coal as it flows through the line is very important for effective quality control over extracted coal. This becomes especially important with the introduction of conveyors and BLCs [blender loader complexes]. Although prototypes of such an instrument have already been created (the "Straume" type ash meter), they cannot be considered as perfected, as they are insufficiently reliable under the real operating conditions of a bucket wheel excavator.

Although the technical problems of excavating Ekibastuz coal with bucket wheel excavators have been for the most part solved, there are still definite difficulties in the introduction of such equipment. For example, the plans provide for the use of ERP-1250 excavators at the Severnyy pit and SRs(k)-2000 excavators at the Bogatyr' pit. This decision has not yet been completely implemented, primarily due to difficulties in the manufacture and delivery of machines. The effect of this is especially felt at the Bogatyr' pit, where the joint operation of various types of equipment, the linear parameters of which have different constraints (for example, bench height from 16 to 30 m) and difficulties in the preparation of new extraction horizons have had a considerable influence in causing the pit's mining engineering parameters to deviate from the planned ones.

There are substantial reserves for improving excavator productivity through reductions in planned idle time (mainly planned repairs) and unplanned (primarily waiting for freight cars and breakdowns in main equipment). It is sufficient to note that the actual shift time use factor is 0.25-0.4, while time spent waiting for and moving freight cars reaches 50 percent of shift time. The time spent in the technical servicing and repair of bucket wheel excavators amounts to 20-55 percent of calendar time and substantially exceeds norms. This is due to shortcomings in repair work organization and the small capacity and shortage of equipment at the enterprise's repair base.

The time spent repairing excavator breakdowns amounts to 1-10 percent of calendar time. Idle time due to emergencies is mainly caused by breakdowns in digging and conveyor equipment. A sizable number of digging equipment breakdowns take place during the excavation of hard rock interbeds. This, in its turn, is due to the improper preparation of faces during fragmentation blasting. In addition,

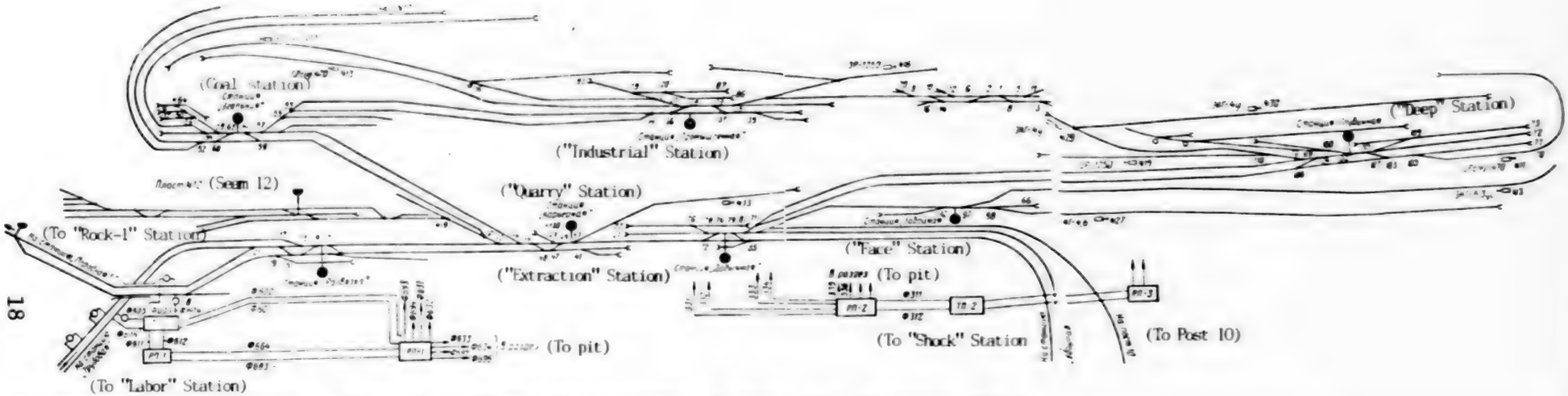
the maximum technical productivity of bucket wheel excavators frequently exceeds (by 1.3-2 fold) the norms, leading to the overloading of main drives and the breakdown of conveyor equipment. This requires additional repair time. It is essential that the length of repair time be brought into accordance with existing norms, which, in their turn, should be reduced through improvements in the organization of technical servicing and repairs and through increases in repair base capacity and improvements in equipment availability. The implementation off these measures will minimize bucket wheel excavator repair time. There are still also very great losses in productivity due to railroad switching operations. This problem should be solved by the sector's production workers and specialists.

Bucket wheel excavators can also be used to cut extraction horizons, especially at the Bogatyr' pit, something which has already become necessary. The time spent in the preparation of new horizons, including the cutting of horizons and the laying of railroad tracks should not exceed two years. This includes one year for mining operations. The layout used for EKG-4u excavators is complicated, involving the relaying of up to 25 km of railroad track and requires three years to prepare extraction horizons. The inevitable production of nonstandard sizes of coal extracted by single bucket excavators, considerable (1.5-2 hours) idle time for locomotives and cars being loaded, and the increased unit consumption of explosives are shortcomings in the present flowsheet. Work is now under way on the development of special equipment (interbench reloaders and loading devices) which will make it possible to use ERP-1250, ERShRD-5000 and SRs(k)-2000 bucket wheel excavators to cut 10-28 m deep trenches.

The struggle against dust created during the extraction and subsequent movement of coal is quite serious. It solution is especially important due to the planned introduction of conveyors for flow layouts (Vostochnyy pit) and cyclic-flow layouts (Severnyy and Bogatyr' pits). The existing equipment for dust supression is restricted with regard to assortment and range of use. As a rule, these are mainly sprinkler systems (the high pressure units especially are quite effective during warm weather) and suction-filter units. The main sources of dust will be units for transfer from reloaders to conveyors, between conveyors, storage areas, loading points and installations for reloading from railroad to conveyor. This problem must be solved by sector scientific research organizations with the help of other institutes, including academic ones.

Stripping Operations

The steady increase in the working depth (this also means increases in working zone heights) at Ekibastuz pits is leading to increases in the total distance of the stripping work front (more than 100 km). There is corresponding growth in the volume of overburden rock movement. Between 1960 and 1980 it increased by 43 million m^3 and by 1985 will grow another 18 million m^3. Cuts are opened by flank trenches with external spoil banks. However, because of the cosiderable depth (around 100 and 70 meters respectively for the Severnyy and Botagyr' pits) a direct approach to the lower horizons is impossible. Transportation (See Fig. 1.) includes dead end approaches to stations. This results in crossings of stripping and extraction freight movements and in sliding cross-overs. Their use means



ИС. 1. Схема путевого развития разреза «Северный»

Figure 1. Track Development Layout for Severnyy Pit.

shorter transportation links between working horizons and exit trenches, but their traffic carrying capacity is limited. When there are saturated freight flows this reduces the effectiveness of mine transportation equipment.

At present the Severnyy combined cut is working 8 stripping banks, while the Bogatyr' (Stepnoy stripping pit) is working 5. The flowsheet for their stripping and working is already quite complex and will become even more so as mining operations get deeper. As a result of this and the influence of other factors, the calendar time use coefficient of excavators at stripping operations is 20-25 percent below planned levels and at spoil bank operations 20-33 percent below. The biggest explanation of this is the shortage of transportation, only 65-70 percent of the stripping excavators' transportation needs are met. There are thus obvious and substantial losses in excavator productivity. In 1982 it only reached 47 percent of planned levels at the Stepnoy stripping pit. All this caused considerable lagging of stripping operations, especially at the lower horizons of the eastern side of the Severnyy pit and the anticlinal and facial regions of the Bogatyr' pit.

Improvements in the technology of stripping operations in general and individual processes are a reserve for raising production efficiency and ensuring the required volumes of overburden rock removal. The single bucket excavator remains the basic extraction machine at these operations. It is technically upgraded through improvements in components and parts, increases in linear parameters and bucket capacity. The SE-3 and EKG-4 excavators have gradually been replaced by EKG-8i, EKG-12.5 and EKG-6.3u excavators. EKG-12.5s with 16 m^3 buckets are already being used at spoil banks. The next to be introduced will be the promising EKG-20 model. At the same time, Ekibastuzugol' is experiencing shortages of the EKG-12.5, the basic stripping machine. This applies especially to work at the Severnyy pit, where there are no such machines. The EKG-8i excavators are the ones primarily used (22 out of 28). The approved technical plan provides for the complete modernization of the stripping excavator fleet to EKG-12.5 machines. It is essential to look for possibilities of increasing bank height, as this would permit reductions in the current stripping volume and the number of transport horizons. Stripping bank height now averages 10-12 m. Attempts to use a layout with combined banks of up to 35 m have still not produced the results which would permit the widespread use of this method.

Blast holes are drilled by 2SBSh-200 and 2SBSh-200N units. Drilling volume is systematically increasing. NIIORG [Possibly: Scientific Research Institute for the Organization of Mining Operations] associates, jointly with association and pit workers have established that 18 m is the maximum height for a bank to be blasted. Banks are blasted in a set which is up to 26 m wide, a 1.5-2 m high protective berm is built along the railroad tracks and additional holes up to 8 m deep are drilled between holes in the last series. Charges in holes drilled at angles of 75° are detonated with 35-70 millisecond delays. If banks more than 18 meters high are blasted there are, as a rule, slides which obstruct railroad tracks.

The association should work to increase the reserve of fragmented rock mass. At present, the systematic delays in drilling operations make it necessary to shoot a large number of small shots, reducing the quality of fragmented rock and

increasing unproductive idle time of mining and transportation equipment. The levels of drilling operation mechanization are low because of the poor quality of the equipment produced. The insufficiently strict observation of technological discipline also has an effect upon the quality of the prepared rock mass.

Just as is the case with coal extraction, the main ways to improve drilling and blasting work involve its overall organization and linkages with other processes and improvements in the structure and upkeep of drilling equipment and blasting operation techniques.

Reliable results have not yet been obtained from research on the possibility of extensively using bucket wheel excavators for stripping operations. The high values of digging resistance, stripping volume and working zone height all make mutually exclusive demands upon the durability, reliability and linear parameters of such excavators. In designing excavators with high digging force it is attempted to make them as compact as possible, i.e. small linear parameters, while from a technological point of view it is essential to have machines with large linear parameters. Nevertheless, there should be a focused and systematic search for a solution to problems in the rational use of continuous excavators for stripping operations. This would create the prerequisites for sizable increases in labor productivity.

At the Severnyy, Yuzhnyy and Zapadnyy spoil banks use is made of excavator stacking in a single stack with the two sided development of a curvilinear front. The following excavators are used here: EKG-8i with 8 and 10 m^3 buckets, EKG-12.5 with 12.5 and 16 m^3 buckets and ESh-10/70A in a layout with stacking in two sub-banks and the transfer of rock to a second stack on a single dead end track. The use of draglines reduces haulage distance, increases spoil bank capacity, reduces track relocation work and increases total bank height to 90 m. Work experience has shown that bank slopes of up to 35 m are stable. In the future the use of conveyors will make it possible to stack banks of greater height, making it possible to substantially reduce the average distance between stripping operations and spoil banks.

Thus, practically all elements of stripping work can and should be substantially improved. This will be assisted by the precise organization of their interaction, the strict observation of technological discipline and constant improvements in the professional standards of workers and engineering-technical personnel. Stripping operation intensiveness can be improved mainly through the conversion to combined railroad-conveyor haulage, the improvement of methods and equipment of railroads, blasting and excavators.

Pit Drainage

The advanced drainage of coal deposits being prepared for development by surface methods is essential for the normal functioning of each pit. Work safety and the effective use of unique mine haulage equipment at pits is possible only with a system of measures to drain groundwaters.

The Ekibastuzugol' Association widely applies drainage methods which use underground drains and raise drilled wells. At the Severnyy pit the drainage tunnel system includes three inclined shafts located in the western non-working side,

and drainage drifts and cross drifts totaling 14 km driven through coal seams at a depth of 200 m. These tunnels have special rooms, in each of which 6-9 raise wells have been drilled. The wells are arranged in a fan shape at angles of 30°-70° from the horizon.

At the Bogatyr' pit the mining field is drained through a two layer system of 16 km of drainage tunnels (drifts, cross drifts, and crosscuts) 80 and 180 m below the surface. The drainage horizons are penetrated by two inclined shafts located in the southeast non-working side of the pit.

Over a 5-6 year period the drainage tunnels are dug out by coal banks and should be replaced. According to the reconstruction plan for the Severnyy pit, where there is already considerable lagging in drainage work and their is no effective drainage of overburden rock, it is necessary that three vertical shafts, 377, 403 and 415 m deep, be sunk in the non-working side and the first section of 11,250 m of horizontal drainage workings be driven at a depth of 400 m. The expanded work front at the Bogatyr' pit resulting from the opening of reserves in Section No. 9 makes it necessary to drive 8,100 m of drainage tunnels at a depth of 180 m. In order to drain rock and coal at the Vostochnyy pit now under construction, a 440 m inclined shaft and drainage horizons at 80 and 180 m below the surface with drainage tunnels totaling 9,365 m are being driven. Thus, over the next 4-5 years just at the operating Severnyy and Bogatyr' pits and the Vostochnyy pit now being built it will be necessary to sink 4 shafts totaling 1,635 m and drive about 30 km of drainage tunnels. In addition, it is also essential to very rapidly work out a plan for draining the deep horizons of the Bogatyr' main field (Sections No. 5 and 6). Special attention here should be given to measures for draining overburden rock because of the forthcoming conversion of stripping operations to cyclic-flowline technology.

Transportation

Railroads are the the only type of coal and overburden transportation in the basin.

The intensive development of the basin's coal reserves through the deepening and expansion of pits makes it necessary to build and operate a large and complex transportation system. Railroad trackage totals more than 800 km, the annual volume of laborious track relaying work exceeds 600 km, and will grow another 35-40 percent over the next 3-4 years. Haulage distance is steadily increasing and already exceeds 15 km.

The association's rolling stock consists of around 1,700 diesel locomotives, electric locomotives, traction sets, dump cars, freight cars of various types and diesel trains. The basic types of locomotives are: TE-3, TEM-2, YeL-1 26E-2M, OPE-1, PE-2M; dump cars -- 2VS-105, VS-136 and 2VS-180. A considerable part of the fleet is obsolete or obsolescent. Together with the difficult transportation layout and the long haulage distance this creates additional difficulties through the great loss of time for repair and rebuilding operations and the lack of correspondence between actual and planned working conditions. In 1982 total locomotive idle time was equivalent to 20 percent of the fleet's working time.

The plan for the Stepnoy stripping pit calls for the use of three unit OPE-1 traction sets with an adhesion weight of 360 tons and 136 ton dump cars. In actuality use is made of two unit sets with an adhesion weight of 240 tons. Because of this train capacity is 95 m^3 and daily productivity 900 m^3 less than planned. For this reason alone the pit is 20-25 percent short of the stripping plan.

The low (1.65 kV) voltage of the power supply system is a factor delaying growth in productivity at the Severnyy pit. Characteristically, even somewhat of an increase in the weight norms of trains with PE-2M traction sets in recent years could not halt the decline in daily productivity. To a considerable extent this is explained by the substantial drop in system voltage due to overloading, making it impossible to attain the planned traffic speeds. The conversion to a 3.3 kV system is being unjustifiably prolonged, even though this would not only assist in the wider use of improved PE-3T traction sets with thyristor controls and 600 m^3 capacity trains, but would also permit a 12-15 percent increase in the productivity of PE-2M sets.

It is essential to accelerate the development and introduction of improved design eight axle dump cars meeting operational requirements. An experimental group of such dump cars is being tested at the Severnyy pit. The 180 and 136 tons dump cars now being used hinder the steady operation of rail haulage, especially on movable track. The large share (up to 60 percent) of movable track is a reason for the large amount of track work. To carry out such work the association has 139 units of track machinery, including the VPO-3000, VPRS-500, VPR-1200; UK-25/9 track laying cranes, rail mounted cranes, bottom dump hoppers, ShPM-02 tie inserters, PRM-3 lift and alignment machines and others. A track machinery station (TMS) has been built, a gravel quarry put into operation and track conditions and repairs improved. However, much remains to be done. The TMS, for example, only meets 50-60 percent of the enterprise's needs, including 10 percent of assembled track and tie set repair needs.

Comprehensive work is essential to improve the upper structure of track in order to increase allowable axle loadings of rolling stock and improve operating conditions. Operating norms must be developed and metal ties used. In view of their great length (up to 5 km), face tracks should be partially converted to the semi-stationary category, put on the balance sheets and be given the appropriate current maintenance.

Repairs of Basic and Auxiliary Equipment

The plan divides the association's repair enterprises into two groups. The first group includes facilities supervised by the association and servicing all pits and other of its enterprises (the plant for the repair of mine transportation equipment, the mechanization administration, PTU [Possibly: production and technical administrations] repair enterprises and motor vehicle garages). The second group includes services of pits and PTUs themselves, doing the repair and technical servicing of mine transportation equipment not included in the programs of facilities in the first group.

The plant for the repair of mine transportation equipment is the association's main repair enterprise. It performs 7.7 million rubles worth of repair work annually. Since 1980 the centralized repair of single bucket and bucket wheel excavators has been organized here. However, the plant's production and technical capabilities prevent it from repairing the association's entire fleet of excavators. In 1982 it met 46 percent of the association's needs for centralized repair. Because of lagging in the construction of repair enterprises in the first group, in the immediate years ahead their output volume will not be near the required level.

The line equipment at repair enterprises is intended for the repair of YeL-1 and YeL-2 electric locomotives, EKG-4.6 and EKG-8 excavators and dump cars of up to 100 ton capacity, and is not capable of repairing bucket wheel excavators, EKG-12.5, EKG-8i and ESh-10/70A excavators; OPE-1, PE-2M locomotives or 2VS-105 and 2VS-180 dump cars. The mechanization administration does the centralized repair of bulldozers and tractors. In 1982 there were 31 major, 23 medium and 22 current repair jobs. This was not an insignificant share of repair requirements. Repair enterprises have non-standard equipment, but there are not enough process line fittings, test stands or qualified repair personnel, especially machine tool operators.

As a consequence of the unsatisfactory supplies of spare parts, repair enterprises are compelled to build some complicated items for which they do not have the necessary metal cutting and heat treating equipment. Mine transportation equipment is repaired by the individual method. There is no parts exchange and units do not have the required material-technical readiness. For these reasons equipment idle time during repair amounts to 10-55 percent of calendar time. The association has outlined a number of measures to liquidate shortcomings in repair operations. These include: the operational introduction of a rolling stock repair shop at the transportation repair plant, the construction of the first section of a shop for traction set and diesel locomotive current repairs and technical inspection at the Tuz station, the use of elements of the component repair system for excavators and the setting up of a parts exchange, the expansion of centralized repair, and other measures.

Planning and Reconstruction of Pits

Of the four ETEK pits now in operation, two -- the Severnyy and the Bogatyr' -- require radical reconstruction. This primarily involves a review of the haulage layout and means of transportation in order to support the required levels of extraction with high techno-economic indicators. A third pit is being built. This is the Vostochnyy: the introduction of its first section is planned for 1984. A fourth, the Maykyubenskiy, located 65 km from Ekibastuz, as yet has only been provided with scientific and design studies at the TEO [Techno-economic substantion] stage.

The engineering plans for the reconstruction of the Severnyy pit, which were made by Karagandagiproshakht [Karaganda State Institute for the Planning of Mines], call for annual capacity to increase from 22 to 35 million tons of coal. The following basic solutions to pit reconstruction are outlined: the

complete conversion of extraction operations to bucket wheel technology, increasing bank height to 15 meters and cutting new horizons by bucket wheel excavators working together with reloaders; the replacement of EKG-8 excavators by EKG-12.5s, increasing the height of stripping banks to 20 m; the organization of second levels at spoil banks, increasing their height to 60 m; the conversion of intra-mine railroad power supply from 1.65 kV to 3.3 kV DC and the introduction of PE-3T traction sets with adhesion weights of 372 tons; the improvement of the intra-mine transportation layout through the shift to a two bank system of working coal seams and the installation of permanent haulage lines on the western side to prepare stripping horizons on the eastern side and the lower coal horizons.

Pit reconstruction began in 1978. However, it is lagging considerably behind planned deadlines because of delays in the conversion of electric traction to 3.3 kV, shortfalls in the delivery of the main equipment (EKG-12.5s and PE-3Ts), reductions in the rates of construction and installation work due to the lack of sufficient capacity on the part of contracting organizations in the Ekibastuzshakhtostroy [Ekibastuz Mine Construction] Combine, the Pavlodar Transportation Construction Trust, USSR Ministry of Power Engineering and the KaSSR Ministry of Highways. These delays are not only hindering increases in pit capacity, but also making it considerably more difficult to support the present levels. The organizations at fault for this situation should make every effort to eliminate their liabilities.

Simultaneously with the engineering plan, an outline has been developed for a general plan for pit development, increasing its capacity to 50 million tons annually. In accordance with UkrNIIproyekt recommendations, there are provisions to completely convert extraction operations and partially (53 percent) convert stripping operations to mixed railroad-conveyor haulage. This solution was dictated by the character of changes in pit parameters and the techno-economic indicators of its operation with railroad haulage in view of the steady increase in working depth. Studies show that by the time 50 million ton annual capacity is attained, the pit will be around 230 meters deep, the average distance of coal haulage will be 22 km and of overburden haulage -- 16-18 km. The average daily freight turnover of coal will exceed 3.2 million ton-kilometers. Using combined haulage the average distance will only be 9 km and the daily freight turnover moved by rail will only be 1.2 million ton-kilometers, i.e. a decline of almost 2.7 fold.

Coal will be conveyored to the surface by five lifts with a productivity of 2,500 m^3/hour each, located in inclined shafts. Such flow line haulage will simplify surface facilities. As only some of the coal will be blended, it is intended to build 2 blending storage facilities with a capacity of 75,000 tons each and three accumulators of 50,000 tons each. At each stage it's planned to store the coal in two stacks. The equipment for the receiving section of the facilities is identical and includes conveyors and stackers. Various types of loaders will be used at different stages: special blending machines at the blenders, and rotary loaders at the accumulators (See Figure 2.). This will guarantee the effective blending of coal and its timely shipping to customers.

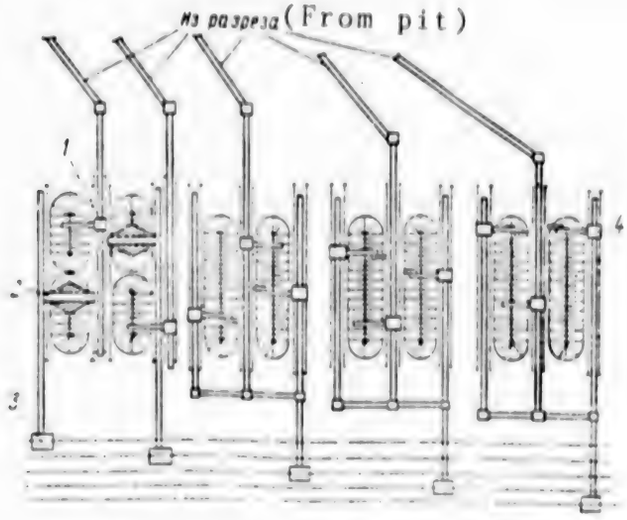


Figure 2. Flowsheet for Blender-Loader Facility at Severnyy Pit.

Key: 1. Stacker
2. Blender-Loading Machine
3. P-4V Loading Point
4. Rotary Loader

The volume of overburden rock haulage by combined and railroad transport is distributed proportionally to its volume by depth, defined as the zone of direct railroad approaches. Overburden rock from horizons located below these approaches will be moved to spoil banks an average distance of 6.5 km by 4 conveyor stackers with productivity of 4,000 m^3/hour (7,000 tons/hour) each. There it will be stacked in two layers (50 and 30 m high) by OShS-4,000/125 spoil bank stackers. Each will be loaded by conveyors from two independent crusher-reloaders with a productivity of 2,000 m^3/hour each (See Figure 3.). The estimated time of unloading 11 VS-180 dump cars is about 15 minutes.

Compared to the presently used system, cyclic-flow line technology will bring more stable techno-economic indicators, as operating conditions for each of the elements will be close to optimal in spite of the steady increase in pit depth. Unfortunately, there are a number of factors hindering the introduction of this progressive technology (the two side development of mining operations, large capital investments, weakness of the construction base, problems in the production of conveyor equipment of the necessary types and sizes, etc.).

To provide scientific support for new technology it is essential to organize experimental-industrial sections in the basin to work out various engineering solutions and train personnel to work with new equipment. When one takes into consideration the magnitude of the potential introduction of continuously operating equipment, the costs of creating such sections will undoubtedly be paid off.

In its engineering plan for the 30 million ton annual capacity Vostochnyy pit now under construction Karagandagiproshakht intends to use a conveyor coal haulage layout that will have no analogues in the practice of surface

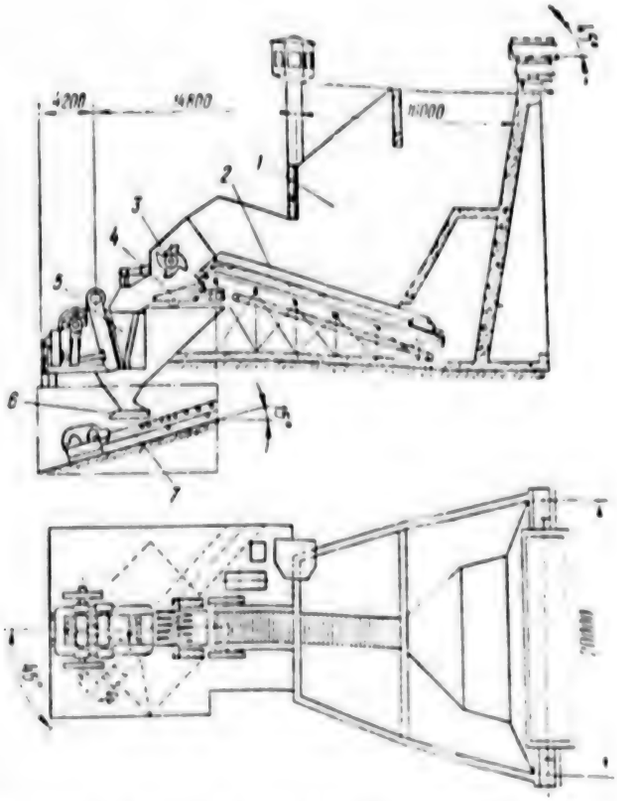


Figure 3. Variant of Layout for 2,000 m³/ hr. Crusher-Reloader

Key:
1. 700 m³ bunker
2. Plate-type feeder, 1-24-150
3. UKR crusher
4. Vibrating screen
5. ShchDP-15x21 jaw breaker
6. Conveyor feed
7. 4,000 m³/hr. belt conveyor

mining operations throughout the world. It is unique in that face conveyors will be oriented along the strike of the strata, lying within the pit field at angles of 10°-30°. After a horizon's reserves have been extracted, the conveyors will be shifted periodically, once every 3-4 years (when working the upper zone to a depth of 80-100 m) with the advancing work front. Together with connector conveyors, they will be dismantled, moved and reassembled at horizons being developed. Such a layout, with interblock units temporarily completely under centralized connector conveyors makes extremely high demands upon production organization, technological discipline, the standards of automation, technology and comprehensive mechanization of auxiliary processes, the technical repair and servicing system and the skills of workers and employees. The sector's science has an important role in the solution of these problems.

The blender-loader complex includes a system of distribution conveyors and four blender storage facilities of the same design as at the Severnyy pit, three loading points (for internal overburden rock as well).

The plan calls for practically all new conveyor equipment. The engineering objectives for its creation were worked out by the Novo-Kramatorsk Machine Building Plant Association, UkrNIIproyekt and Karagandagiproshakht with the

participation of Ekibastuzugol'. Nevertheless, the conveyors have not yet been built, even though the start-up of the first section is intended for 1984. Problems in the manufacture of auxiliary equipment sets have also not been solved. It is essential to take immediate measures to deliver the necessary equipment to the pit on time.

The basin's traditional technology, using single bucket EKG-12.5 excavators and railroad haulage is planned for stripping operations. UkrNIIproyekt and Kuzbassgiproshakht have determined that the preferable technology for coal extraction work at the future Maykyubenskiy pit will be cyclic-flow line with single bucket excavators and combined truck and conveyor haulage. The traditional layout for stripping work at Ekibastuz pits has been affirmed by techno-economic substantiation.

A three year program of NIOKR [scientific research and experimental design work] has been planned as part of the general scheme for the exploitation and development of the Ekibastuz basin. It includes 12 themes covering various facets of mining development at ETEK. These will be done essentially by all main sector institutes and by organizations in related ministries and departments.

Mining operations are only one component part of ETEK, so their development should be subordinated to the development patterns of the entire region and of the fuel and energy base of the country as a whole. It is apparently time for a coordinated, comprehensive approach to solving all problems of the great Ekibastuz.

Thus, in order to ensure the step-by-step development of ETEK the following is necessary:

1. Considerable strengthen the construction base of the coal component, strictly observe equipment assortment and manufacturing and delivery time frames, strengthen plan and technological discipline, guarantee key personnel's stability and high professional standards.

2. Radically reconstruct the Severnyy and Bogatyr' pits through the widespread introduction of continuously operating equipment, primarily conveyor transportation at extracting and stripping operations.

3. At operating enterprises more widely use existing reserves for improving labor productivity and output quality and for enhancing the techno-economic indicators of coal extraction. These include:

a. The blasting preparation of rock masses: increase the use factor of drill units through improvements in the organization of labor and repair work; modernization of the drill unit fleet, replacing obsolete models with new SBR-160A, 2SBSh-200MN, SBSh-250-55 and BTS-150 units; organize a single blasting facility; reduce the number of shots through the conversion to large shots; search for rational parameters for blasting operations which would make it possible to increase the height of stripping banks to 20 m, increase blasting operation mechanization levels by supplementing the charge loading machine fleet with MZ-4 machines;

b. Excavation: Accelerate the transition to a single type of equipment within one pit (first of all extraction pits); expand the use of bucket wheel excavators through their introduction in the cutting of extraction horizons, the use of P-1600 reloaders and the construction of new interbank reloaders with productivities of up to 5,000 m^3 per hour; expand the use of EKG-12.5 and EKG-6.3u excavators at stripping operations; increase the mechanical reliability of excavator parts and components; improve excavator utilization through more precise work organization and the reduction of emergency rates during excavation and related processes;

c. Transportation: eliminate lagging in the development of transportation layouts, constructing permanent haulage lines on the western side of the Severnyy pit, and at the tie-in and coal stations, both in new directions and at transfer points; accelerate the reconstruction of traction substations, the power supply system and feeders, converting to 3.3 kV in order to increase train capacity and speed at the Severnyy pit; modernize rolling stock through the introduction of PE-3T traction sets and more improved 145 ton dump cars; increase, to 16 cars, the weight norm for coal delivery at the Bogatyr' pit by using three unit OPE-1 sets with an adhesion weight of 360 tons and lengthening dead end tracks at stations and posts within mines; improve track work mechanization levels and quality;

d. Technical servicing and repair: in 1985 -- operationally introduce a rolling stock repair shop at the mine transportation equipment repair shop; begin construction of shops for the current repair and technical inspection of traction sets and diesel locomotives at the Tuz station; operationally introduce the first stage of the construction of the maintenance of way base; in 1983-1984 -- organize a permanent repair site for fixing excavators under field conditions; use the component repair system at the plant for mining equipment repair, creating the appropriate components and parts exchanges; expand the volume of centralized repair of excavators at the mining transportation equipment repair plant.

4. Work out a general scheme for the region's development, taking into consideration, ecological, social, technical and other factors.

This program's implementation will assist in the fulfillment of the basic decisions of the CPSU 26th Congress concerning the development of the country's fuel and energy base and the more rational use of natural, labor and material resources.

11574
CSO: 1822/150

COAL

PROGRESS AT EKIBASTUZ COAL COMPLEX OUTLINED

Tselinograd FREUNDSCHAFT in German 21 Feb 84 pp 1-2

[Article by Petr Yerpilov, first secretary of the Pavlodar Oblast Committee of the Communist Party of Kazakhstan: "Years of Intensive Building Work"]

[Text] The workers of Pavlodar Oblast, which is decorated with the Order of Lenin, are preparing a worthy tribute to the glorious 30th Anniversary of the Openin Up of the Virgin Lands through high labor productivity and successes in socio-political life. On the eve of this jubilee we are surveying the most recent past in our thoughts. Pavlodar was one of the areas of Kazakhstan into which trains carrying future virgin lands developers and high-capacity agricultural machines, construction materials and means of transportation, rushed in the early spring of 1954. The first group arrived in our area in February 1954 from Alma-Ata. After a week a group from Moscow arrived here, followed by the emissaries from the Tambov, Orel and Tula oblasts. However, trains from Leningrad, the Ukraine, Belorussia, Transcaucasia, the Baltic and other republics and oblasts of the country were already on the way. During the first year alone, more than 10,000 new settlers arrived in the oblast. These included qualified specialists and people of various professions, who were able to cope with any task and were also willing to fulfill them.

Beginning with the first days of the opening up of the virgin lands, the sovkhoz and kolkhoz workers felt the constant care and attention on the part of the party and the entire Soviet people. All union republics took part, with great patriotic impetus, in the equipment of the virgin lands sovkhoz with tractors, soil cultivation, harvesting, and grain-cleaning machines. During the same year of 1954, the oblast received thousands of new haulers, combines, and a lot of other machines.

In 1954 28 new grain sovkhozes were established in the oblast, including the Lenin, Kuybyshev, Golubovkiy, 19th Party Congress, Krasnokutskiy, Sovetskiy Kazakhstan, and other sovkhozes. And already during the first year of the opening of the virgin lands, more than 1 million hectares came under the plough. During the years 1954 and 1955, the grain fields were increased nearly fourfold and brought up to 2,395,000 hectares.

A serious test for the party organization and all workers in the agriculture of the oblast was the harvest of 1958. About 124.5 million poods of grain were

poured into the state granaries at that time. For this achievement, the oblast received the Order of Lenin, the highest government award. During the past 30 years, it produced more than 2 billion poods of grain.

The development of the virgin and fallow land entailed great difficulties. These were complicated still further by the devastating wind erosion of the soil. Its control was the goal of the entire organizational and political work among the masses, as well as the entire scientific and production potential of the oblast. An effective, comprehensive, soil-conserving system of agriculture was developed and successfully introduced in agriculture. By the beginning of the 8th Five-Year-Plan, wind erosion had essentially been overcome. Thereupon a systematic growth of plant production could be attained and the feed basis for animal husbandry could be secured and thus its further development could be assured.

Considerable progress could be registered in animal husbandry. There was an increase in the inventories of cattle, sheep, hogs, and poultry, and there was an increase in animal and poultry output. As a result, the possibility presented itself to bring about a significant increase in the sale of meat, milk, eggs and wool to the state during the years ahead.

There was intensive development of the irrigated agriculture. The irrigated surfaces come to 120,000 hectares. By the end of the current five-year-plan, this figure is supposed to increase to 150,000.

Since the beginning of the virgin lands epopee, approximately 3 billion rubles were claimed by the agriculture of the oblast alone. Within a relatively short time, highly-mechanized large-scale agricultural enterprises came into being here. While there were about 31 sovkhozes in the oblast in 1953, there are presently 126. Many of these, which were newly established here, are now models of highly-efficient agricultural enterprises.

For outstanding achievements, numerous virgin lands farmers were awarded the title of Hero of Socialist Labor, including T. V. Volkov, P. F. Musyka, Y. G. Hering, N. M. Sokolov, I. I. Bykmukhmet, and others.

At present 35,000 people in agriculture are recipients of rders and medals. These are the best people of the oblast. Their devoted and noble work is a sure guarantee for new achievements and victories. The young virgin lands farmers are following in the footsteps of their fathers and older br[illegible]rs. Whole dynasties of specialists in agricultural mechanization.

With good reason, the beginning of the development of the virgin and fallow lands is regarded by us as the beginning of the current biography of the Pavlodar Oblast with all of its rayons. With the first stake in the construction of the tractor plant and the first furrow in the virgin lands, an efficient territorial complex came into being, with powerful energetics, extensive machine building, solid ferrous and non-ferrous metallurgy, chemical, petroleum and fuel industry, and a highly-mechanized agriculture.

Hand in hand, shoulder to shoulder, Russians, Kazakhs and Germans, Ukrainians and Belorussians, Latvians and Lithuanians--representatives of about 100 nationalities and peoples of our country--have conquered and developed the steppes of the oblast. Since the first years of the development of the virgin lands, multinational collectives and teams, international marriages and families have become an everyday phenomenon.

Thanks to the rapid growth of the economy, our cities and villages are being transformed, the prosperity of people is increasing, their cultural level is rising, and their working and living conditions are improving. In the at one time uninhabited desolate steppe, modern settlements with schools and hospitals, clubs and trade centers have come into being during the past 30 years. Let us turn to the Kolkhoz 30 Years of the Kazakh SSR--a leading agricultural enterprise of the oblast. In its modern central settlement there is a music school and a House of Culture. In the Kolkhoz there is a stable collective of specialists in mechanization, doctors, teachers and cultural workers. In terms of their building facilities, the central settlements of many kolkhozes and sovkhozes can compete withthe cities.

The consolidation of the material-technical basis and the devoted work of the employees in agriculture are producing gratifying results. The workers in the agriculture of the oblast have fulfilled their state plans with respect to the purchase of meat, milk, eggs, vegetables and potatoes for the past year and the first three plan years.

The Pavlodar-Ekibastuz territorial complex, which at the 26th CPSU Congress was described as one of the large-scale complexes of the country, has undergone dynamic development during the first three years of the 11th plan period. The country received petroleum products, tractors and clay above the plan. The enterprises of the light and food industry increased their production output.

Special attention is being given to the more rapid realization of the Ekibastuz fuel-energy complex. This is the main task which the oblast party organization has been given by our party and government. Since the beginning of the current five-year-plan, approximately 100 million rubles in investments have been laid claim to here--which surpasses the achievement of the 10th Five-Year-Plan for the corresponding period by a factor of 3. In 3 years the coal producers of Ekibastuz, together with the traffic workers ofthe Ekibastuzugol [Ekibastuz Coal] Production Association, dispatched about 2 million tons of coal to the thermal power plants of the country. The construction of the overland power station No 1 will soon be completed; its output will reach 3.5 million kilowatts. The capacities of the thermal power stations in the oblast come to about 7 million kilowatts, which amounts to more than half of the output of all power plants in the republic.

During the past few years the production of more than 300 new industrial products was begun in the oblast; the share of products of the highest quality category in the total production volume increased by 36 percent. Complex systems of quality control are operating in 72 industrial enterprises of the oblast.

From year to year there is an increase in the investments in the construction of apartments, social, cultural and other public institutions. During the

first 3 years of the current plan period, the workers of the oblast received 60,000 square meters more living space than during the corresponding period of the past five-year-plan. As a result, 120,000 persons were able to improve their living conditions.

The successes in cultural and economic development did not come by themselves, they had to be achieved. They are the result of the devoted work of the workers, kolkhoz farmers and intelligentsia--of all the workers of the oblast, the result of a colossal organizational and ideological educational work of the party, state, trade union and Komsomol organs. The party organizations support and propagate valuable initiatives, which have come into being in the production collectives: "Utilize Every Technological Complex and Every Aggregate Up to the Planned Capacity", "High-Grade Products With Minimal Energy Expenditure", "Collective Responsibility for High Work Discipline", and others. In industrial, construction and agricultural enterprises, people are persistently struggling for the maximum utilization of all reserves, for the reduction of production costs and the improvement of production quality.

Much has already been done, still more work lies ahead of us, however. From the standpoint of the decisions of the June and December Plenums (1983) of the CPSU Central Committee and the recently adopted decision of the Central Committee with respect to the activity of the Central Committee of the Communist Party of Moldavia regarding the perfection of the system of guidance, the style and the methods of work, the oblast party organization has critically assessed its achievements and shortcomings; now it is ascertaining new reserves and setting itself realizable, well-founded tasks for the future.

In the course of the comprehensive socialist competition in honor of the impending elections to the USSR Supreme Soviet and the 30th anniversary of the beginning of the virgin lands action, the workers of the oblast's industry intend to produce products valued at 6.5 million rubles above the annual plan; the construction workers intend to turn over 400,000 square meters of living space to their destination; the sovkhozes and kolkhozes plan to sell 212,000 tons of milk, 92,000 tons of meat, 2,510 tons of wool, 750,000 tons of grain, as well as other animal and plant products to the state during the current year. Those are taut, but sound plans. In his speech at the December Plenum (1983) of the CPSU Central Committee, comrade Yu. V. Andropov said: "According to the party, the task can be stated only as follows: The strict fulfillment of the plan must be secured, but we also must exhaust all possibilities for its overfulfillment. The entire economic activity, the socialist competition, the economic, organizational and ideological and educational work of the party, the trade union and Komsomol organizations, as well as the local soviets, must be directed towards this." With a view to this, the communists and all work collectives of the oblast must make rational use of the colossal investments made available by the state, must manage the economy economically everywhere, must confirm the principle of economy and exhaust all internal reserves for the realization of the tasks of the five-year-plan. All of this requires the continued consolidation of work and production discipline, and the development, in every worker, of the feeling of personal responsibility and participation in the affairs and interests of every enterprise and office.

Continuing to cultivate the valuable traditions that came into being in connection with the gaining of the virgin lands, the workers of the Pavlodar Oblast will struggle still more actively and persistently for the realization of the decisions of the 26th CPSU Congress and the subsequent plenums of the CPSU Central Committee, attain new successes in the realization of the food and energy program, and successfully fulfill the plans of the 4th plan year and the entire five-year-plan.

8970
CSO: 1826/17

CENTRAL ASIAN COAL INDUSTRY DEVELOPMENTS SURVEYED

Moscow UGOL' in Russian No 12, Dec 83 pp 12-13

[Article by A. I. Leleko, general director, Sredazugol' [Central Asian Coal] Association: "Prospects for the Development of the Coal Industry in Central Asia"]

[Text] In the 11th Five-Year Plan it is intended to improve the technical standards of production at the Sredazugol' Association in the following ways: The further expansion of coal extraction by surface methods through the introduction of highly productive transportation equipment at pits, increases in the productivity of excavators and in the capacity of rail cars and trucks; the reconstruction of the Angren and Agulak pits, the construction of the large new Kara-Kiche pit; improvements in development systems used in mines; work concentration through increases in loadings per working face, wing and seam; expansions in the mechanization of coal extraction and transportation; increases in the use of combines for driving mine workings and in the introduction of stronger supports and improvements in underground haulage and surface systems at mines.

As of 1 January 1983 the productive capacity of the association's mines and pits was 10,480,000 tons. In 1982 the association extracted 10,424,000 tons of coal, of which 67.4 percent was by strip methods. Coal extraction by such methods will be further increased through the reconstruction of the Angren pit. During this reconstruction period, it will be necessary to remove 275.7 million cubic meters of overburden to prepare reserves for extraction. The following machinery will be used: EKG-12.5, EKG-8i and ESh-15/90 excavators (67), DET-250 bulldozers (68), and 2SBSh-200H drill units for inclined drilling (35).

Great importance is being placed upon railroad transportation at the pit, since by the completion of reconstruction, haulage will amount to 137,600,000 tons. After the second and third rock tracks are laid, there will be 680 km of tracks, of which 560 will be electrified. All coal and overburden will be hauled by 54 PE-2 locomotives, while the rolling stock fleet will be increased to 500 large capacity dump cars. A mine transportation equipment repair plant will be built to maintain locomotives and cars. It is planned to convert traction units to 3,000 volts, considerably improving railroad transportation's operational potentials.

An automated system for the management of technological processes (ASUTP) will be introduced at the pit.

The introduction of improved engineering, new equipment and automation has considerably improved labor productivity.

It is intended to complete the reconstruction of the Kyzyl-Bulak pit in the Kirghiz SSR, increasing its productive capacity by 300,000 tons annually. The pit is being supplied with the following highly productive mine transportation equipment: EKG-8i, EKG-5 and ESh-10/70 excavators, 75 ton BelAZ-549 dump trucks, 40 ton BelAZ-548 dump trucks and 2SBSh-200 drill units. This will make it possible to complete the required amount of stripping work within the planned deadline and bring the pit up to planned capacity.

Work is under way to modernize the Almalyk pit, increasing its capacity to 500,000 tons. In the long term coal strip mining will be developed in northern Kirghiziya. It is planned to build the 3,000,000 ton capacity Kara-Kiche pit together with a thermal power plant near the deposit. Simulaneously, as a result of the development of new sections of the Tura-Kavakskaya coal area, it is planned to increase the Agulak pit's capacity to 1,000,000 tons.

In the south of the republic, in Osh Oblast, it is intended to build the Kumbel' pit, with a capacity of up to 1,000,000 tons, and the 300,000 ton Samarkandek pit. These will, to a considerable extent, meet this region's demand for coal.

Parallel to the development of strip mining, there will also be growth in the productive capacity of underground mines. In the Uzbek SSR it is intended to rebuild Mine No. 9, increasing its capacity by 200,000 tons. It is planned to do this by sectioning 18 million tons of reserves and introducing mechanized complexes at loading operations. All mine development work is being done with the help of GPK and 4PU tunnel driving combines. Coal and rock will be moved from faces to the surface completely by conveyors, and it is planned to use 6DMKU freight and personnel monorails to haul materials and equipment. In the immediate future the mine will become a completely mechanized enterprise.

At the Angren field it is planned to build the Ablykskaya and Nishbashskaya mines (900,000 tons each), while in Surkhan-Darya Oblast the 300,000 ton Baysun Mine will be built. At the Mine imeni Leninskiy Komsomol, Kyzyl-Kiyskoye Mine Administration, opening and preparation work is under way at the + 500 meter level and the skip shaft is being deepened from +750 m to + 500 m. This will make it possible to increase the mine's capacity to 400,000 tons. Simultaneously, the problems in rebuilding the mine's ventilation systems will be solved. The use of industrial air conditioners will create comfortable working conditions in the mine. According to data from exploratory work, the favorable bedding of the seam in the mine's eastern wing will make it possible to use mechanized complexes to extract coal.

At Mine No 6/18, Sulyukta Mine Administration it is planned to open and develop the new + 950 m horizon. According to preliminary exploration data, extraction areas below +1,050 are more gently sloping, of uniform altitude and thickness and could be worked by OKP-70 mechanized complexes.

The Kok-Yangak Mine is developing three seams in a very complex structure with a branched network of tectonic dislocations. This causes definite difficulties in working stoping sections and is leading to increased losses of coal underground. In view of the commercial reserves left in the operating horizon it is planned to open and develop a new horizon at + 1,000 m. Coal is now being extracted by mechanized complexes and combines with individual hydraulic supports. In order to improve efficiency it is necessary to replace the present OKP-10 complexes with OKP-70 and MK-75 complexes and transport coal on horizontal haulage ways using the SP unit trains with VDK-2.5 mine cars. The plan for opening and developing horizon + 1,000 m provides for the comprehensive mechanization of breakage, development and auxiliary work. When this horizon is put into operation the mine's capacity will increase to 700,000 tons annually.

At the Tsentral'naya Mine there are plans for reconstruction and the opening of a new horizon in conjunction with the sinking of a second vertical shaft, the introduction of which will elimirate the discontinuity in underground haulage, reduce the distance of supported workings and improve mine ventilation. At present both working and development faces are being worked by the drill and blast method. By 1985 it is planned to introduce tunnel driving combines for development workings and an extraction combine for longwall work in seam 1.

At the Dzhergalan Mine there are provisions for opening and developing a new horizon at + 2,130 m in which it is intended to have two working faces in the west and east wings of the mine. This will permit a 33 percent increase in coal extraction volume. To eliminate discontinuities in transport it is intended to run an inclined transport conveyor from the Kapital'naya Mine's horizontal gallery to the lower horizon. When this is done, underground transportation will be completely by means of conveyors, from face to surface.

Together with the development of new horizons and the technical modernization of operating mines it is also planned to build new coal extraction enterprises.

In 1983,to replace the Severnaya Mine, which was closing, construction began on the Tegenek Mine in the Tash-Kumyr Mine Administration. At this mine all processes at working faces, development workings and coal transportation will be completely mechanized. UKP type mechanized complexes will be used at working faces and GPK tunnel driving combines in mine workings. Belt conveyors will haul coal to the surface facilities while personnel and materials will move along inclines and intermediate workings on 6DMK freight and personnel lines. Electric locomotives will be used for auxiliary operations in horizontal workings and single lift hoists in inclined ones.

At the Sulyutka field there are now two mines in operation, having a total capacity of 400,000 tons. Mine No. 2/4 is depleting its reserves at existing horizons and should be closed in the not too distant future. To replace it, the construction of Mine No. 11, with a capacity of 900,000 tons annually is planned in a well explored field. The field's balance reserves amount to 82.7 million tons, including 66.7 million tons in A + B categories, for the large part smoothly bedded, with uniform thickness, making it possible to mechanize working faces and development workings.

With the operational introduction of Mine No.11 and the second section of the Kyzyl-Bulak pit, the capacity of the Sulyukta Mine Administration will more than double and amount to 1,800,000 tons annually.

At present PNIUI [Possibly: Perm Scientific Research Institute of Coal], KNIUI [Karaganda NUIU], VNIMI [All Union Scientific Research Institute of Mine Surveying], and Karagandagiproshakht are researching the potentials for developing the eastern wing of Mine No. 8. In the west wing of this mine there are 3 longwalls in operation, 2 of which are equipped with OKP-10 mechanized complexes, even though the seam's bedding conditions require their replacement by OKP-70 complexes. Coal is hauled to the skip shaft completely by conveyors.

Simultaneously with the construction of mines and pits there will be extensive construction of housing, cultural and service facilities and recreation areas. It is also intended to build an out patient clinic for 500 patients at Lake Issyk-Kul. In the 11th Five-Year Plan alone it is intended to spend 27.5 million rubles for such purposes.

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SYNOPSES OF ARTICLES IN UGOL' UKRAINY, NOVEMBER 1983

Kiev UGOL' UKRAINY in Russian No 11, Nov 83 pp 47-48

[Achievements of Ukrainian mines; tasks and measures]

UDC 658.516.622.26; Donetsugol'

EXPERIENCE WITH STANDARDIZATION OF PREPARATORY DEVELOPMENT WORK AT DONETSUGOL' ASSOCIATION

[Synopsis of article by A.M. Rud', pp 5-6]

[Text] Considers experience in development and introduction of a standardized system for part of the coal mining process, i.e., preparatory development work.

UDC 622.01.658.357.5; M. Gorkiy Mine

RHYTHM OF WORK AT THE MINE IMENI M. GOR'KIY DURING EXTRACTION OF THIN SEAMS

[Synopsis of article by V.I. Prishchepa, pp 7-9]

[Text] Results of work, improvements, mechanization, and restoration. Stripping of new reserves, technical and economic indicators and tasks are considered. 1 table, 1 illustration.

UDC 622.268.13; Barakov Mine

WORK EXPERIENCE OF P. YE. KUKNERIK'S DRIVING BRIGADE

[Synopsis of article by Yu. F. Moiseyenko, pp 9-10]

[Text] Work organization in the vanguard brigade. Technical and economic indicators, responsibilities and implementations are considered. 1 illustration.

UDC 622.26; Yuzhnodonbasskaya Mine No 3

COMBINE DRIVING: AN EFFECTIVE METHOD FOR DEVELOPMENT WORK IN THE YUZHNODONBASS MINE NO 3

[Synopsis of article by N.F. Borodulya, pp 11-12]

[Text] The use of the combine for development work in the Yuzhnodonbass Mine No 3 is an initial objective of the 11th Five-Year Plan. Achievements of the driving brigade and its work organization are considered.

UDC 622.268.001.8; Mine imeni Lutugin

SPEED DRIVING OF A THROUGH-CUT

[Synopsis of article by V.I. Malov, pp 11-12]

[Text] At the Lutugin Mine, Torezantrasit Association, a through-cut 185 m long was driven in 17 days. Work organizations and technical and economic indicators are considered. 2 illustrations.

UDC 622.232.75; Cold Beam

EXCAVATION OF EXTREMELY THIN LAYERS BY MEANS OF SCRAPER-PLOWS

[Synopsis of article by V.V.Serbin, pp 14-16]

[Text] Technology and organization of coal excavating operations during use of scraper-plows provides test results. 3 illustrations.

UDC 622.85.2.622.86→614.283

CONDUCT OF OPERATIONS IN DANGEROUS WATERFLOODED AREAS

[Synopsis of article by I.F. Sliz'ko, pp 16-18]

[Text] Determination of dangerous zone boundaries in the Dneprovsk Basin and safety measures for carrying out mining in these zones. 4 illustrations, 1 reference.

UDC 622.283.5.624.012.36

STRENGTHENING OF ARCH SUPPORTS BY MEANS OF TIE RODS

[Synopsis of article by I.P. Kurchenko, V.D. Troyan, N.S. Beskorovaynyy, pp 19-20]

[Text] Results of tests of flexible tie pieces in the Voroshilovgrad Mine No 1, design and technology for the installation of ties, necessary tension, application effectiveness and durability are considered. 3 illustrations.

UDC 622.016.62.622.5

EFFECT OF SPEED IN DEVELOPING FACE ON AMOUNT OF WATER PRODUCTION

[Synopsis of article by V.P. Pertsev, pp 20-21]

[Text] Results of modeling the process of working in fissured rock conditions in the Donbass are considered. The insignificant increase in water flow at the breakage face when development speed is increased from 2.5 to 10 m/day is discussed. 3 illustrations.

UDC 622.01.338.94

SOCIAL AND ECONOMIC EFFECTIVENESS OF THE RE-EQUIPMENT OF THE UKRAINIAN MINING INDUSTRY

[Synopsis of article by F.I. Yevdokimov, S.Ya. Salyga, pp 22-23]

[Text] Proposals are given for determining the social and economic effectiveness of the technical re-equipment of the UkSSR Minugleprom mines. 4 references.

UDC 622.333.658.5

EFFECT OF THE EFFICIENCY OF UTILIZATION OF PRIMARY RESERVES ON NET COST OF COAL

[Synopsis of article by R.S. Karenov, p 24]

[Text] A method is given for estimating the effect of efficient use of productive assets on net cost of coal based on the "depreciation" factor. The mathematical economic relationship of net cost of coal to asset size of reserves is considered. Examines measures to lowering net cost of coal as a result of rational utilization of principal coal reserves.

UDC 622.272.8

IMPROVING UTILIZATION OF MINE PRODUCTION CAPACITY

[Synopsis of article by F. Beda, p 25]

[Text] The relationship of the effective utilization of mine production capacity of the Ukrzapadugol' Association's Mines to a series of technical mining factors. Examines influence of the level of mine capacity utilization on their operating indicators.

UDC 69.003.658.012.2

OPTIMIZATION OF A SERIES OF MEASURES CONCERNING MATERIALS ECONOMICS

[Synopsis of article by A.P. Chayka, V.I. Maydanov, p 25]

[Text] A mathematical economic model is considered for the optimization of a series of measures concerning economical use of materials.

UDC 622.411.332

DESIGN REQUIREMENTS FOR STOPING COMBINES AS RELATED TO THE GAS FACTOR

[Synopsis of article by A.I. Babrov, pp 26-27]

[Text] Design of stoping combines that prevents formation of dangerous methane accumulations in the coal extraction zone. Discusses efficient distribution of work units. 1 illustration.

UDC 622.232.8.004.067

TESTS OF THE MODERNIZED IMKM UNIT UNDER COMPLICATED THIN SEAM CONDITIONS

[Synopsis of article by V.N. Briling, V.Ya. Daubert, T.V. Kim, pp 27-28]

[Text] Design and test results of the modernized IMKM unit intended for cutting seams 1.15 to 1.4 m thick and with weak lateral media. 1 illustration.

UDC 622.232.72

THE POISK-2 NARROW-CUT COMBINE

[Synopsis of article by D.S. Kompaniytsev, p 29]

[Text] The Poisk-2 combine for steeply inclined and steep seams 0.36 to 0.75 m thick. Working principles and test results are discussed. 1 illustration.

UDC 622.232.83

IMPROVING RELIABILITY OF THE 4PP-2 DRIVING COMBINES

[Synopsis of article by G.V. Petrushkin, V.G. Semenyuta, G.A. Nedzvetskiy, p 30]

[Text] Results of experimental research on the process of forming maximum loads on the motor of the 4PP-2 combine's loading unit and recommendations on the adjustment of the safety couplings are considered. 2 illustrations.

UDC 622.67-192.658.152.011

ADVISABILITY OF TWO ENGINE MOTORS FOR TUNNEL BORERS

[Synopsis of article by V.S. Lisovskiy, P.A. Bazilevich, M.P. Kuznetsova, p 31]

[Text] Criterion for the advisability of two engine motors. The relationship of motor lifting capacity to the degree of loading of the skips. Examines formula for determining losses due to downtime of the lifting unit. 1 illustration, 2 references.

UDC 625.2.019.4.622.625.28.83

IMPROVEMENT OF THE SANDBOX SYSTEM OF ELECTRIC LOCOMOTIVES

[Synopsis of article by A.I. Lesnikov, p 32]

[Text] The possibility of maintaining sand in a dry state in the sandbox system of electric locomotives. Provides proposed design of unit.

UDC 622.232.002.5

RESEARCH ON THE DYNAMIC LOADING OF THE SOYUZ-19 COMBINE UNDER INDUSTRIAL CONDITIONS

[Synopsis of article by A.M. Levin, N.A. Svyatnyy, Ye. N. Iverovskiy, V.N. Evyagintsev, pp 32-33]

[Text] The values of the loading variation coefficient in the transmission of the rotary driving combine for various degrees of instrumental dullness and loading expectation levels are considered as well as the spectral composition of the loading on the shaft of the actuator. 1 illustration, 1 reference.

UDC 621.313.333.213.34.622.002.5.004.62

EVALUATING RELIABILITY OF MINING EXPLOSION-PROOF ELECTRIC MOTORS

[Synopsis of article by B.N. Baneyev, V.M. Gostishchev, p 33]

[Text] Evaluates factors which are taken into account in estimating the reliability of explosion-proofed electric motors used in mining. Provides a simplified method for estimating the average life of the motor prior to complete overhaul.

UDC 622.831.327."313"

EVALUATING THREAT OF BURSTS IN SEAMS DUE TO GAS

[Synopsis of article by A.Ye. Ol'khovichenki, A.I. Molozhan, V.M. Lapatukhin, pp 34-36]

[Text] An analysis of the experimental data with the intent to determine the most representative indicators of explosion threat due to gas. Discusses the basis for a new indicator for recognizing explosion danger for current, local and regional forecasting factors. 2 tables, 1 illustration, 1 reference.

UDC 622.41.519.24

SELECTION OF PARAMETERS TO MONITOR AIR CONSUMPTION FOR VENTILATION CONTROL

[Synopsis of article by V.A. Svyatnyy, S.S. Yefremov, p 36]

[Text] The selection of parameters for monitoring the flow of air depending upon the characteristics of the principal influences in the ventilation control process. 1 illustration, 2 references.

UDC 622.822.622.417.2

AIR TEMPERATURE IN DEEP MINE SHAFTS DURING REVERSE VENTILATION FLOW

[Synopsis of article by A.M. Gushchin, V.N. Shevchenko, V.L. Lobov, p 37]

[Text] Air temperature is considered in the shafts of four deep mines of the Donbass (Bazhanov, Kalinin, Zasyad'ko and Glubokaya) in the transition from normal to reverse ventilation mode. Provides recommendations. 1 illustration.

UDC 622.413.4

REMOVAL OF CONDENSATION HEAT FROM COOLANT WITH MINE WATER USING AN INTERMEDIATE HEAT-EXCHANGER

[Synopsis of article by Ya. I. Driga, A.K. Yakovenko, p 38]

[Text] A system for the extraction of condensation heat from coolant by means of mine water via an intermediate heat-exchanger is considered. Provides handling method as well as example of the intermediate heat-exchanger design. 1 illustration.

UDC 622.765.061

USE OF A 2-ETHYLHEXANOL PRODUCTION DERIVATIVE FOR COAL FLOTATION

[Synopsis of article by N.S. Vlasova, L.G. Savinchuk, V.B. Chizhevskiy, pp 39-40]

[Text] Results of physico-chemical and flotation research on the VKP reagent are considered. Provides recommendations. 2 tables, 2 illustrations, 2 references.

UDC 662.741.3.022.001.5.622.33

FEATURES OF COAL ENRICHMENT BY-PRODUCTS DEPENDING ON DEGREE OF COAL METAMORPHISM

[Synopsis of article by Yu. A. Chernyshov, S.G. Shvarts, S.N. Danilov, pp 40-41]

[Text] Results of research on the characteristics of coal enrichment by-products as related to the level of metamorphism of the coal. 1 table.

UDC 622.831.322

SOME MINING AND GEOLOGICAL CONDITIONS DERIVED FROM A DETAILED EXPLORATION OF THE OL'KHOVATKA SECTION

[Synopsis of article by G.M. Stovas, N.V. Sakhnevich, N.S. Polyakova, O.D. Stasenko, pp 41-42]

[Text] A method of plotting forecasting maps for threat of explosion that utilizes geological and prospecting data. 1 table, 2 illustrations, 1 reference.

UDC 622.83

SPECIAL FEATURES OF THE PROCESS OF FOLDING OF THE EARTH'S SURFACE IN WORKINGS IN THE TOREZ-SNEZHNYAN RAYON

[Synopsis of article by V.N. Yatsenko, pp 43-44]

[Text] Deformations of the earth's surface in the Donbass anthracite regions are considered as well as the relationship between curved and horizontal deformations. 3 tables, 1 illustration, 1 reference.

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